# امتحانات رقم (1)

## الترم الاول

30 Marks

# Model (1)

## 1 Choose the correct answer:

9

**a** The mode of the values 5 , 3 , 8 , 5 , 9 is .......................... . ( 8 , 3 , 5 , 9 )

**b** The median of eight consecutive odd numbers is 22, then what is the largest number? ( 25 , 29 , 21 , 27 )

**c** The measure of the central angle of the circular sector that represents 30% of the area of the circle? (180° , 108° , 118° , 72°)

**d** Which of the following charts does not display the actual data? (dot plot , histogram , bar graph , stem and leaf plot )

**e** If m(∠A) = 150, then m (reflex ∠A) = .......................... ° (30 , 20 , 110 , 210)

**f** Which of the following ratios is equal to $\frac{16}{64}$ ? $(\frac{1}{4} , \frac{4}{8} , \frac{14}{48} , \frac{64}{48})$

**g** The number of diagonals in a hexagon is .......................... . ( 6 , 8 , 9 , 10 )

**h** The median of the values 5 , 15 , 7 , 18 , 17 , 30 is .......................... . ( 15 , 16 , 17 , 18 )

**i** If ( 2 , 5 ) is the midpoint of $\overline{AB}$, where A(4 , 1 ) , then B .......................... [ ( 6 , 5 ) , ( -2 , 3 ) , ( 0 , 9 ) , ( 2 , 3 ) ]

## 2 Answer the following:

21

**a** In a survey of a group of people were asked their favorite sport, the results were as follows:

| Sports | Handball | Basketball | Football | Volleyball |
|---|---|---|---|---|
| Percentage | 15% | 25% | 45% | ....... |

Represent the survey results using a pie chart:

..........................................................................................

..........................................................................................

..........................................................................................

**b** If ABCD is a parallelogram where A(-1 , 1 ) , B( 4 , 2 ) and D( 1, 4 ). Determine the coordinate of the following:

**1** The point of intersection of its diagonals. **2** The vertex C.

.......................................................................................................

.......................................................................................................

**c** Given: A = { 9 , 6 , 7 , 10 } , B = { 8 , 9 , 10 }

Find A ∪ B , A ∩ B

.......................................................................................................

.......................................................................................................

**d** Find in N the solution set of the equation $3(x - 2) - 4x = -8$

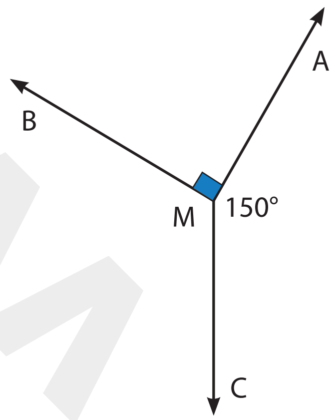
.......................................................................................................

.......................................................................................................

**e** From the opposite figure, find m( ∠ BMC )

.......................................................................................................

.......................................................................................................




**f** The ratio among the lengths of a triangle is 3 : 4 : 5.

If its perimeter is 72 cm, what is the length of its greatest side?

.......................................................................................................

.......................................................................................................

**g** Using the properties of multiplication in Z , find the value of :

(-4) × (-8) × 25 × (-125)

.......................................................................................................

.......................................................................................................

30 Marks

# Model (2)

## 1 Choose the correct answer:

9

**a** If the mode of a+2 , a+1 , a+3 , a+2 equals 12 , then a = .......................... (2 , 6 , 10 , 12 )

**b** The arithmetic mean of the values 7-x , x-3 , 8 is .......................... . (12 , 2x , 4 , x+4 )

**c** The measure of an interior angle of a regular polygon with 8 sides is ..........................°.

(108 , 120 , 135 , 140 )

**d** When representing the opposite table in a pie chart, what is the measure of the central angle representing the monorail sector?

| Mode of transport | train | metro | monorail |
|---|---|---|---|
| Number of people | 700 | 1,200 | 600 |

(100.8° , 172.8° , 86.4° , 24°)

**e** For a set of values:

If $\sum f = 10$ and $\sum (f \cdot x) = 40$ , then the value of $\bar{x}$ = .......................... (4 , 30 , 50 , 400)

**f** The sum of measures of the accumulative angles around the center of the circle is ..........................°.

(120 , 180 , 90 , 360)

**g** The point (-3 , 5) lies in the .......................... quadrant. (first , second , third , fourth)

**h** The projection of the point (4 , -3) on the y-axis is .......................... .

[ (0 , 3) , (0 , -3) , (4 , 0) , (-4 , 0) ]

**i** If the arithmetic mean of five integers is 16, the median is 17 and the mode is 13, then the greatest of these integers is .......................... . (19 , 33 , 1 , 68)

## 2 Answer the following:

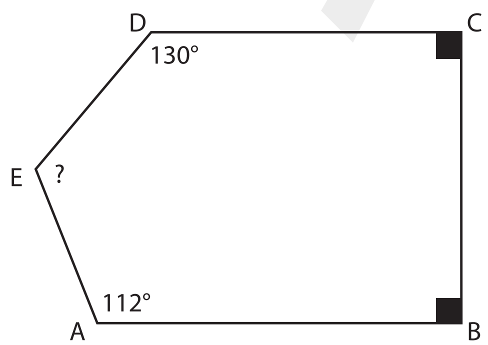
21

**a** In the opposite figure:

m (∠ EDC) = 130° , m (∠ EAB) = 112°

$\overline{CB} \perp \overline{AB}$ , $\overline{BC} \perp \overline{CD}$

Find with proof m (∠ DEA)




..........................................................................................................................................................

..........................................................................................................................................................

**b** If ABCD is a rhombus where A (3,5), B (12, -3) and C (13, 9), determine the coordinates of the following:

**1** The intersection point of its diagonals.

**2** The vertex D.

..................................................................................................................................

..................................................................................................................................

**c** Hazem bought a pair of shoes for 450 L.E after a discount rate of 10%. Find the original price of the shoes.

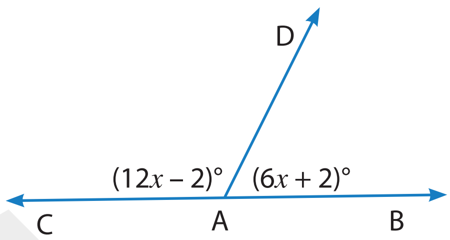
..................................................................................................................................

..................................................................................................................................

**d** From the opposite figure, find the value of $x$.

..................................................................................

..................................................................................




**e** From the stem and leaf plot representing the marks of some students. Complete:

Mode = ..............................................

Median = ..............................................

| stems | leaves |
|---|---|
| 25 | 3 5 |
| 26 | 0 1 1 3 |
| 27 | 2 3 5 |
| 28 | 8 9 |

Key 26|0 means 260

**f** If the magnification ratio of an insect's image is 30 : 1 , and the insect's real length is 2.5 mm, find the length of the insect in the image in cm.

..................................................................................................................................

..................................................................................................................................

**g** A rectangle has a length 7 cm greater than its width, and its perimeter is 66 cm, find the length of the rectangle.

..................................................................................................................................

..................................................................................................................................

30 Marks

# Model (3)

## 1 Choose the correct answer:

9

**a** For a set of values: If $\bar{x} = 20$ and $\sum (f \cdot x) = 1{,}500$ , what is the value of $\sum f$ ?

(75 , 150 , 3,000 , 30,000)

**b** The median of four consecutive even numbers is 25 , what is the largest of these numbers? (28 , 26 , 25 , 22)

**c** The measure of the central angle of the circular sector which represents 35% of the circle is .................... °. (35 , 108 , 120 , 126)

**d** The angle with measure 80° has a vertically opposite angle with a measure of ............ °.

(30 , 80 , 90 , 180)

**e** The projection of the point (-7 , 3) on the y-axis is .................... .

[ (-7 , 0) , (0 , 3) , (0 , 0) , (7 , - 3) ]

**f** The measure of the central angle of a sector representing $\frac{1}{3}$ the area of the circle equals .................... °. (120 , 150 , 240 , 90)

**g** The number of axes of symmetry of a square is .................... . (2 , 3 , 4 , 6)

**h** If (4 – 2k , 3m + 9) lies on y-axis , then k equals .................... . (7 , 5 , 3 , 2)

**i** The mode of values 5 , 4 , 6 , 8 , 4 , 5 , 4 , 8 is .................... . (4 , 5 , 8 , 6)

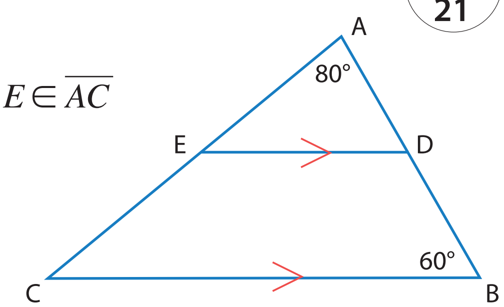
## 2 Answer the following:

21

**a** In the opposite figure, the triangle ABC :

m (∠ A) = 80° , m (∠ B) = 60° , $D \in \overline{AB}$ , $\overline{ED} \,//\, \overline{CB}$ , $E \in \overline{AC}$

Find m (∠ AED) and m(∠ DEC)




.......................................................................................................................................

.......................................................................................................................................

**b** In a tennis match, a player hit 15 smashes, distributed as shown in the opposite table. Draw a pie chart for this distribution.

| Set | First | Second | Third |
|---|---|---|---|
| No. of hits | 7 | 3 | 5 |

........................................................................................................................

........................................................................................................................

........................................................................................................................

**c** Find three consecutive numbers whose sum equals 168

........................................................................................................................

........................................................................................................................

**d** If the length of an insect is 0.3 mm and its length after magnification is 4.5 cm, find the magnification ratio.

........................................................................................................................

........................................................................................................................

**e** Hany bought a refrigerator with a 10% discount. If he saved 430 L.E, what is the price of the refrigerator after the discount?

........................................................................................................................

........................................................................................................................

**f** Sara's mother's age now is three times Sara's age, and she is also 24 years older than Sara, how old is each of them now?

........................................................................................................................

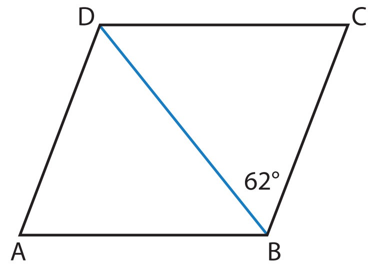
........................................................................................................................

**g** In the opposite figure:

ABCD is a rhombus

m (∠ DBC) = 62°

find with proof m (∠ A)




........................................................................................................................................

........................................................................................................................................

30 Marks

# Model (4)

## 1 Choose the correct answer:

9

**a** For a set of value: $\bar{x} = 25$ , $\sum (f \cdot x) = 6{,}500$, what is the value of $\sum f$ ?

(162,500 , 6,475 , 260 , 6,525 )

**b** The number of axes of symmetry of an isosceles triangle is .................... . (1 , 2 , 3 , 4)

**c** The measure of the interior angle of a regular polygon with 10 sides is .................... °.

(108 , 120 , 135, 144)

**d** The mode = .................... (2 , 5 , 22 , 35)

| stems | leaves |
|---|---|
| 1 | 0 1 |
| 2 | 0 2 2 3 9 |
| 3 | 4 5 5 5 7 8 |

Key 3|4 means 34

**e** The type of angle which is supplementary to an obtuse angle is .................... angle.

(acute , right , zero , straight)

**f** The .................... is a rhombus that has one right angle.

(square , rectangle , parallelogram , trapezium)

**g** The median of the values 7 , 8 , 9 , 4 , 6 , 2 is .................... . (5 , 6 , 6.5 , 7)

**h** The projection of the point (-2 , 4) on the x-axis is .................... .

[ (2 , -4) , (-2 , 0) , (2 , 0) , (0 , 4) ]

**i** The point A(-3 , -6) is located in .................... quadrant. (first , second , third , fourth)

## 2 Answer the following:

21

**a** If $a = 1\frac{1}{2}$ , $b = \frac{3}{4}$ , $c = \frac{-2}{3}$

Find the numerical value of the expression ac + b

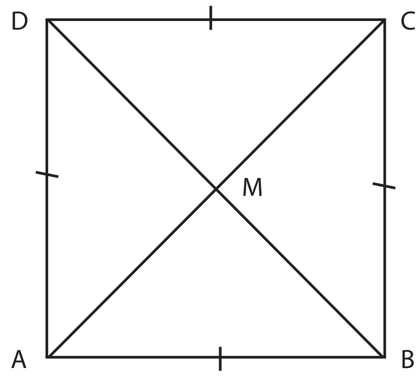
..........................................................................................

**b** In the opposite figure:

ABCD is a square

BD = (5a – 4) cm, MC = (2a – 1) cm

Find the value of a, and then find the length of $\overline{AC}$.




..........................................................................................

..........................................................................................

**c** If the distance between two cities on a map is drawn at a scale of 1 : 1,000,000 and the distance on the map is 12 cm, find the real distance in km.

..........................................................................................

..........................................................................................

**d** What is the increase of the expression –2a – b + 5 than -6 + 3a – 4b?

..........................................................................................

..........................................................................................

**e** If the arithmetic mean of the numbers 16 , n + 3 , 14 , 2n – 2 is 15.25

Find the median of these numbers.

..................................................................................................................................

..................................................................................................................................

**f** Write all subsets of the following set X={3,2,7}, then mention their number.

..................................................................................................................................

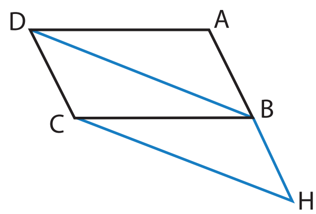
..................................................................................................................................

**g** In the opposite figure:

ABCD is a parallelogram.

AB = BH where H $\in \overrightarrow{AB}$

Prove that BHCD is a parallelogram.




..................................................................................................................................

..................................................................................................................................

30 Marks

# Model (5)

## 1 Choose the correct answer:

9

**a** For a set of values: $\sum (f \cdot x) = 56$ , $\sum f = 8$ , then the value of $\bar{x} =$ .................. (5 , 64 , 48 , 7)

**b** If the arithmetic mean of the values 18 , 23 , 29 , 2k – 1 , k is 18, then k = ......................... (1 , 7 , 29 , 90)

**c** If $\frac{4}{x} = \frac{20}{25}$ , then the value of $x =$ ......................... . (64 , 16 , 5 , 4)

**d** The solution set in Z for the equation $7 - 3x = x + 3$ is ......................... . ({1} , {3} , {7} , )

**e** The multiplicative inverse of $2\frac{1}{4}$ is ......................... . $(\frac{9}{4}, \frac{4}{9}, \frac{2}{3}, \frac{3}{2})$

**f** A parallelogram with base length of 12 cm, its corresponding height is 7 cm, then its area ......................... $cm^2$ . (64 , 96 , 84 , 112)

**g** The value of the expression $4x - 10$ at $x = -1$ is ......................... . (14 , 6 , -6 , -14)

**h** What is the type of angle that supplements an acute angle? (obtuse , straight , acute , reflex)

**i** The number of axes of symmetry of a parallelogram is ......................... . (0 , 1 , 2 , 4)

## 2 Answer the following:

21

**a** If the point A (-3 , 2k – 4) lies on x-axis, determine the quadrant in which the point B (k – 6 , –3K) lies on.

.............................................................................................................................

.............................................................................................................................

**b** From the opposite stem and leaf plot:

1 Write all the data

2 Find the mode, median, first quartile and third quartile.

| stems | leaves |
|---|---|
| 2 | 1 1 2 |
| 3 | 2 3 |
| 4 | 2 2 2 |
| 5 | 1 3 5 |

Key 3|2 means 3.2

1 .............................................................................................................

2 .............................................................................................................

**c** If ABCD is a parallelogram , m(∠ B) = $(3x + 37)°$ , m(∠ D) = $(9x + 1)°$

What is the measure of (∠C)?

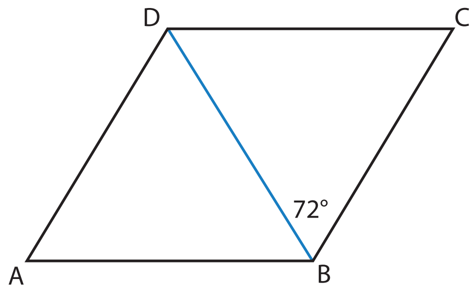
.............................................................................................................................

.............................................................................................................................

**d** In the opposite figure:

ABCD is a rhombus, m(∠ DBC) =72°

Find m (∠ A)




..........................................................................................

..........................................................................................

**e** If $\frac{k}{4} = 9$, what is the value of $\frac{1}{2}$k – 7?

..........................................................................................

..........................................................................................

**f** If 15 % of $x$ equals 20% of y , what is the ratio of $x$ : y?

..........................................................................................

..........................................................................................

**g** A car uses 5 liters of petrol to cover a distance of 60 km, how much petrol would the car need to cover the distance of 180 km if it travels at the same rate?

..........................................................................................

..........................................................................................

# Model (1)

30 Marks

## 1 Choose the correct answer:

9

a. The mode of the values 5 , 3 , 8 , 5 , 9 is .......................... . ( 8 , 3 , 5 , 9 )

b. The median of eight consecutive odd numbers is 22, then what is the largest number? ( 25 , 29 , 21 , 27 )

c. The measure of the central angle of the circular sector that represents 30% of the area of the circle? (180° , 108° , 118° , 72°)

d. Which of the following charts does not display the actual data? (dot plot , histogram , bar graph , stem and leaf plot )

e. If m(∠A) = 150, then m (reflex ∠A) = .......................... ° (30 , 20 , 110 , 210)

f. Which of the following ratios is equal to $\frac{16}{64}$ ? ($\frac{1}{4}$ , $\frac{4}{8}$ , $\frac{14}{48}$ , $\frac{64}{48}$)

g. The number of diagonals in a hexagon is .......................... . ( 6 , 8 , 9 , 10 )

h. The median of the values 5 , 15 , 7 , 18 , 17 , 30 is .......................... . ( 15 , 16 , 17 , 18 )

i. If ( 2 , 5 ) is the midpoint of $\overline{AB}$, where A(4 , 1 ) , then B .......................... [ ( 6 , 5 ) , ( -2 , 3 ) , ( 0 , 9 ) , ( 2 , 3 ) ]

## 2 Answer the following:

21

a. In a survey of a group of people were asked their favorite sport, the results were as follows:

| Sports | Handball | Basketball | Football | Volleyball |
|---|---|---|---|---|
| Percentage | 15% | 25% | 45% | ....... |

Represent the survey results using a pie chart:

The percentage of Volleyball = 100% - ( 15% + 25% + 45% ) = 15%

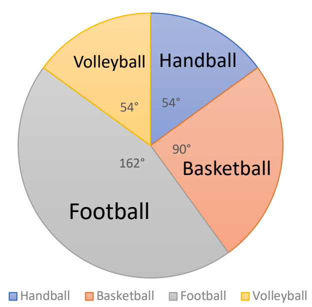
The measure of the central angle of each sector

Handball = 15% × 360° = 54°

Basketball = 25% × 360° = 90°

Football = 45% × 360° = 162°

Volleyball = 15% × 360° = 54°



**b** If ABCD is a parallelogram where A(-1 , 1 ) , B( 4 , 2 ) and D( 1, 4 ). Determine the coordinate of the following:

**1** The point of intersection of its diagonals. **2** The vertex C.

1) The intersection point of the two diagonals

$= (\frac{4+1}{2}, \frac{2+4}{2}) = (2.5 , 3)$

2) Let the point C($x$ , $y$)

$(\frac{-1+x}{2}, \frac{1+y}{2}) = (2.5 , 3)$

$\frac{-1+x}{2} = 2.5$ $\therefore -1 + x = 5$ $\therefore x = 6$

$\frac{1+y}{2} = 3$ $\therefore 1 + y = 6$ $\therefore y = 5$

C ( 6 , 5 )

**c** Given: A = { 9 , 6 , 7 , 10 } , B = { 8 , 9 , 10 }

Find A ∪ B , A ∩ B

A ∪ B = { 6 , 7 , 8 , 9 , 10 } A ∩ B = { 9 , 10 }

**d** Find in N the solution set of the equation $3(x-2) - 4x = -8$

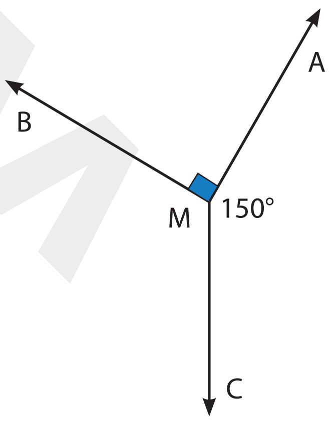
$3(x-2) - 4x = -8$ $3x - 6 - 4x = -8$

$-6 - x = -8$ $x = -6 + 8 = 2$

Solution set = {2}

**e** From the opposite figure, find m( ∠ BMC )

m(∠ BMC ) = 360° – (150° + 90°) = 120°




**f** The ratio among the lengths of a triangle is 3 : 4 : 5.

If its perimeter is 72 cm, what is the length of its greatest side?

The length of the greatest side = $\frac{72 \times 5}{12}$ = 30 cm

**g** Using the properties of multiplication in Z , find the value of :

(-4) × (-8) × 25 × (-125)

(-4) × 25 × (-8) × (-125) ( commutative property )

[(-4) × 25 ] × [ (-8) × (-125) ] ( associative property )

–100 × 1000 = -100,000

## Model (2)

30 Marks

### 1 Choose the correct answer:

9

**a** If the mode of a+2 , a+1 , a+3 , a+2 equals 12 , then a = .................... (2 , 6 , 10 , 12 )

**b** The arithmetic mean of the values 7-x , x-3 , 8 is .................... . (12 , 2x , 4 , x+4 )

**c** The measure of an interior angle of a regular polygon with 8 sides is ....................°. (108 , 120 , 135 , 140 )

**d** When representing the opposite table in a pie chart, what is the measure of the central angle representing the monorail sector?

| Mode of transport | train | metro | monorail |
|---|---|---|---|
| Number of people | 700 | 1,200 | 600 |

(100.8° , 172.8° , 86.4° , 24°)

**e** For a set of values:

If $\sum f = 10$ and $\sum (f \cdot x) = 40$ , then the value of $\bar{x}$ = .................... (4 , 30 , 50 , 400)

**f** The sum of measures of the accumulative angles around the center of the circle is ....................°. (120 , 180 , 90 , 360)

**g** The point (-3 , 5) lies in the .................... quadrant. (first , second , third , fourth)

**h** The projection of the point (4 , -3) on the y-axis is .................... . [ (0 , 3) , (0 , -3) , (4 , 0) , (-4 , 0) ]

**i** If the arithmetic mean of five integers is 16, the median is 17 and the mode is 13, then the greatest of these integers is .................... . (19 , 33 , 1 , 68)

### 2 Answer the following:

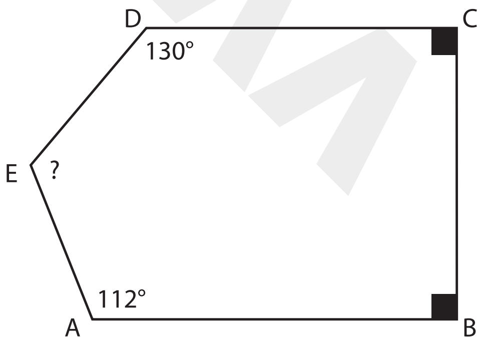
21

**a** In the opposite figure:

m (∠ EDC) = 130° , m (∠ EAB) = 112°

$\overline{CB} \perp \overline{AB}$ , $\overline{BC} \perp \overline{CD}$

Find with proof m (∠ DEA)




Proof:

ABCDE is a pentagon.

The sum of all interior angles = (n – 2) × 180° = 3 × 180° = 540°

m (∠ DEA) = 540° – (90° + 90° + 112° + 130°) = 118°

**b** If ABCD is a rhombus where A (3,5), B (12, -3) and C (13, 9), determine the coordinates of the following:

1 The intersection point of its diagonals.

2 The vertex D.

**1** The intersection point of the two diagonals:

$$= (\frac{3+13}{2}, \frac{5+9}{2}) = (8, 7)$$

**2** Let the point D $(x, y)$

$$(\frac{12+x}{2}, \frac{-3+y}{2}) = (8, 7)$$

$\frac{12+x}{2} = 8$ $\quad \therefore 12 + x = 16$ $\quad \therefore x = 4$

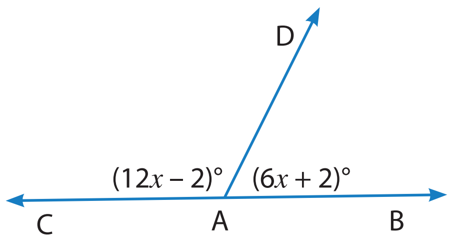
$\frac{-3+y}{2} = 7$ $\quad \therefore -3 + y = 14$ $\quad \therefore y = 17$

D (4 , 17)

**c** Hazem bought a pair of shoes for 450 L.E after a discount rate of 10%. Find the original price of the shoes.

The original price $= \frac{450 \times 100}{90} = 500$ L.E

**d** From the opposite figure, find the value of $x$.




$12x - 2° + 6x + 2° = 180°$

$18x = 180°$

$x = 10°$

**e** From the stem and leaf plot representing the marks of some students. Complete:

Mode = 261

Median = 263

| stems | leaves |
|---|---|
| 25 | 3 5 |
| 26 | 0 1 1 3 |
| 27 | 2 3 5 |
| 28 | 8 9 |

Key 26|0 means 260

**f** If the magnification ratio of an insect's image is 30 : 1 , and the insect's real length is 2.5 mm, find the length of the insect in the image in cm.

Scale of drawing $= \frac{\textit{length in drawing}}{\textit{real length}}$

$$\frac{30}{1} = \frac{\textit{length in drawing}}{2.5}$$

Length in drawing $= \frac{30 \times 2.5}{1} = 75$ mm $= 7.5$ cm

**g** A rectangle has a length 7 cm greater than its width, and its perimeter is 66 cm, find the length of the rectangle.

Let the width $= x$ $\qquad$ The length $= x + 7$

Perimeter of a rectangle $= 2 \times$ (length + width)

$66 = 2 \times (x + 7 + x)$

$33 = 2x + 7$

$x = 13$

The length of the rectangle $= x + 7 = 20$ cm

30 Marks

# Model (3)

## 1 Choose the correct answer:

9

**a** For a set of values: If $\overline{x} = 20$ and $\sum (f \cdot x) = 1{,}500$ , what is the value of $\sum f$ ?

(75 , 150 , 3,000 , 30,000)

**b** The median of four consecutive even numbers is 25 , what is the largest of these numbers? (28 , 26 , 25 , 22)

**c** The measure of the central angle of the circular sector which represents 35% of the circle is .......................... °. (35 , 108 , 120 , 126)

**d** The angle with measure 80° has a vertically opposite angle with a measure of ............... °.

(30 , 80 , 90 , 180)

**e** The projection of the point (-7 , 3) on the y-axis is .......................... .

[ (-7 , 0) , (0 , 3) , (0 , 0) , (7 , - 3) ]

**f** The measure of the central angle of a sector representing $\frac{1}{3}$ the area of the circle equals .......................... °. (120 , 150 , 240 , 90)

**g** The number of axes of symmetry of a square is .......................... . (2 , 3 , 4 , 6)

**h** If (4 – 2k , 3m + 9) lies on y-axis , then k equals .......................... . (7 , 5 , 3 , 2)

**i** The mode of values 5 , 4 , 6 , 8 , 4 , 5 , 4 , 8 is .......................... . (4 , 5 , 8 , 6)

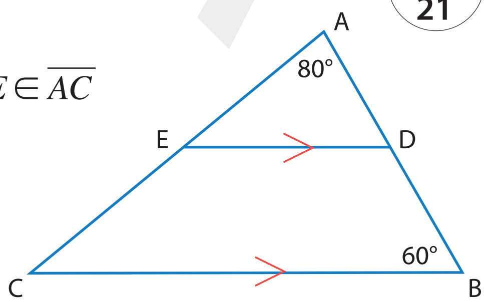
## 2 Answer the following:

21

**a** In the opposite figure, the triangle ABC :

m (∠ A) = 80° , m (∠ B) = 60° , $D \in \overline{AB}$ , $\overline{ED} // \overline{CB}$ , $E \in \overline{AC}$

Find m (∠ AED) and m(∠ DEC)




Proof:

$\because \overline{ED} // \overline{CB}$ , $\overleftrightarrow{AB}$ is a transversal

∴ m(∠ ADE) = m (∠ B) = 60° (corresponding angles) In Δ AED :

∴ m (∠ AED) = 180° – (80° + 60°) = 40°

∴ m (∠ AED) + m (∠ DEC) = 180° (two adjacent supplementary angles)

∴ m (∠ DEC) = 180° – 40° = 140°

**b** In a tennis match, a player hit 15 smashes, distributed as shown in the opposite table. Draw a pie chart for this distribution.

| Set | First | Second | Third |
|---|---|---|---|
| No. of hits | 7 | 3 | 5 |

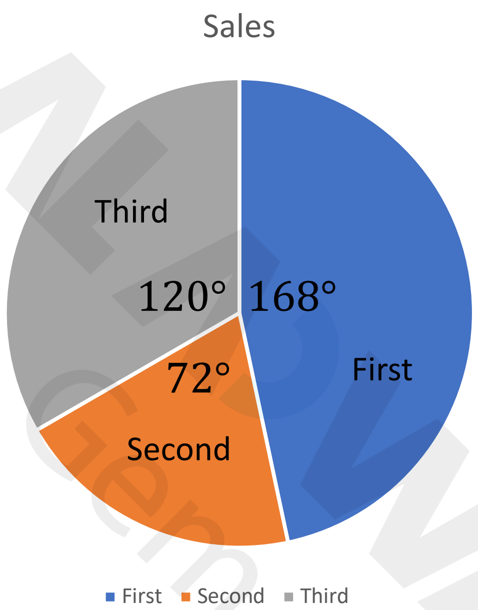
The number of smashes = 7 + 3 + 5 = 15

The measure of the central angle of the first set

$= \frac{7}{15} \times 360° = 168°$

The measure of the central angle of the second set $= \frac{3}{15} \times 360° = 72°$

The measure of the central angle of the third set $= \frac{5}{15} \times 360° = 120°$




**c** Find three consecutive numbers whose sum equals 168

*Let the numbers are* $x$ , $x + 2$ , $x + 4$

$x + x + 2 + x + 4 = 168$

$3x + 6 = 168$

$3x = 162$

$x = 54$

the numbers are 54 , 56 , 58

**d** If the length of an insect is 0.3 mm and its length after magnification is 4.5 cm, find the magnification ratio.

Scale of drawing $= \frac{\text{length in drawing}}{\text{real length}} = \frac{4.5 \times 10}{0.3} = 150$

The magnification ratio = 150 : 1

**e** Hany bought a refrigerator with a 10% discount. If he saved 430 L.E, what is the price of the refrigerator after the discount?

Discount : before : after

10% : 100% : 90%

430 :

The price after the discount = $\frac{90 \times 430}{10} = 3870\ L.E$

**f** Sara's mother's age now is three times Sara's age, and she is also 24 years older than Sara, how old is each of them now?

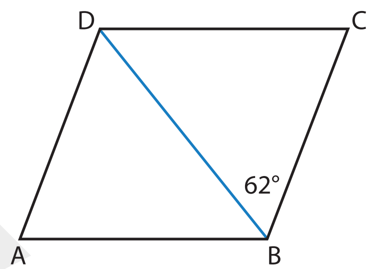
Let Sara's age now be $x$ and her mother's age is $3x$

$3x - x = 24$

$2x = 24$ $\qquad x = 12$

So, Sara's age is 12 years and her mother is 36 years

**g** In the opposite figure:




ABCD is a rhombus

m (∠ DBC) = 62°

find with proof m (∠ A)

proof:

ABCD is a rhombus , $\overline{BD}$ is a diagonal

m (∠ ABD) = m (∠ DBC) = 62°

m (∠ ABC) = 2° × 62° = 124°

m (∠ A) = 180° – 124° = 56°

30 Marks

# Model (4)

## 1 Choose the correct answer:

9

**a** For a set of value: $\bar{x} = 25$ , $\sum (f \cdot x) = 6{,}500$, what is the value of $\sum f$ ?

(162,500 , 6,475 , 260 , 6,525 )

**b** The number of axes of symmetry of an isosceles triangle is .......................... . (1 , 2 , 3 , 4)

**c** The measure of the interior angle of a regular polygon with 10 sides is .......................... ° .

(108 , 120 , 135, 144)

**d** The mode = .......................... (2 , 5 , 22 , 35)

| stems | leaves |
|---|---|
| 1 | 0 1 |
| 2 | 0 2 2 3 9 |
| 3 | 4 5 5 5 7 8 |

Key 3|4 means 34

**e** The type of angle which is supplementary to an obtuse angle is .......................... angle.

(acute , right , zero , straight)

**f** The .......................... is a rhombus that has one right angle.

(square , rectangle , parallelogram , trapezium)

**g** The median of the values 7 , 8 , 9 , 4 , 6 , 2 is .......................... . (5 , 6 , 6.5 , 7)

**h** The projection of the point (-2 , 4) on the x-axis is .......................... .

[ (2 , -4) , (-2 , 0) , (2 , 0) , (0 , 4) ]

**i** The point A(-3 , -6) is located in .......................... quadrant. (first , second , third , fourth)

## 2 Answer the following:

21

**a** If $a = 1\frac{1}{2}$, $b = \frac{3}{4}$, $c = \frac{-2}{3}$

Find the numerical value of the expression ac + b

$ac + b = 1\frac{1}{2} \times \frac{-2}{3} + \frac{3}{4}$

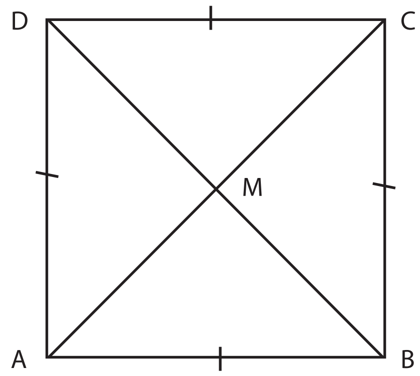
$= \frac{3}{2} \times \frac{-2}{3} + \frac{3}{4} = -1 + \frac{3}{4} = \frac{-1}{4}$

**b** In the opposite figure:

ABCD is a square

BD = (5a – 4) cm, MC = (2a – 1) cm

Find the value of a, and then find the length of $\overline{AC}$.




Proof:

ABCD is a square.

MD = MC

BD = 2 MC

5a – 4 = 2 (2a – 1)

5a – 4 = 4a – 2

5a – 4a = 4 – 2

a = 2

BD = 5a – 4 = 5 × 2 – 4 = 6 cm

AC = BD AC = 6 cm

**c** If the distance between two cities on a map is drawn at a scale of 1 : 1,000,000 and the distance on the map is 12 cm, find the real distance in km.

$$\frac{1}{1{,}000{,}000} = \frac{12\ cm}{real\ distance}$$

$$\text{Real distance} = \frac{12 \times 1{,}000{,}000}{1} = 12{,}000{,}000\ cm = 120\ km$$

**d** What is the increase of the expression –2a – b + 5 than -6 + 3a – 4b?

–2a - b + 5 – (–6 + 3a – 4b)

–2a – b + 5 + 6 – 3a + 4b = (–2a – 3a) + (–b + 4b) + (5 + 6)

= –5a + 3b + 11

**e** If the arithmetic mean of the numbers 16 , n + 3 , 14 , 2n – 2 is 15.25

Find the median of these numbers.

The arithmetic mean = $\frac{\text{sum of values}}{\textit{number of values}}$

$15.25 = \frac{16 + n + 3 + 14 + 2n - 2}{4}$

$61 = 3n + 31$

$3n = 30$ $n = 10$

The numbers : 16 , 13 , 14 , 18

The order : 13 , 14 , 16 , 18

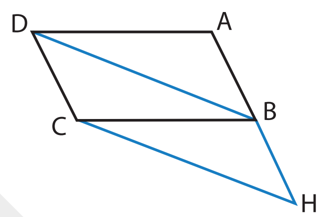
The median = $\frac{14 + 16}{2} = 15$

**f** Write all subsets of the following set X={3,2,7}, then mention their number.

The subsets of set X are : {3} , {2} , {7} ,{2,3} , {2,7} ,{3,7} , {3,2,7},Ø

The number of subsets of X = 8

**g** In the opposite figure:




ABCD is a parallelogram.

AB = BH where $H \in \overrightarrow{AB}$

Prove that BHCD is a parallelogram.

Proof:

∵ ABCD is a parallelogram.

∴ AB = DC

∴ AB = BH

∴ BH = DC

∵ $\overline{AB} \parallel \overline{CD}$ , $H \in \overrightarrow{AB}$

∴ $\overline{BH} \parallel \overline{CD}$

∴ DC = BH , $\overline{BH} \parallel \overline{CD}$

∴ BHCD is a parallelogram.

## Model (5)

30 Marks

### 1 Choose the correct answer:

9

**a** For a set of values: $\sum(f\,.\,x) = 56$ , $\sum f = 8$ , then the value of $\bar{x} =$ .................. (5 , 64 , 48 , 7)

**b** If the arithmetic mean of the values 18 , 23 , 29 , 2k – 1 , k is 18, then k = .......................

(1 , 7 , 29 , 90)

**c** If $\frac{4}{x} = \frac{20}{25}$ , then the value of $x =$ ......................... . (64 , 16 , 5 , 4)

**d** The solution set in Z for the equation $7 - 3x = x + 3$ is ......................... . ({1} , {3} , {7} , )

**e** The multiplicative inverse of $2\frac{1}{4}$ is ......................... . ($\frac{9}{4}$ , $\frac{4}{9}$ , $\frac{2}{3}$ , $\frac{3}{2}$)

**f** A parallelogram with base length of 12 cm, its corresponding height is 7 cm, then its area ......................... $cm^2$ . (64 , 96 , 84 , 112)

**g** The value of the expression $4x - 10$ at $x = -1$ is ......................... . (14 , 6 , -6 , -14)

**h** What is the type of angle that supplements an acute angle?

(obtuse , straight , acute , reflex)

**i** The number of axes of symmetry of a parallelogram is ......................... . (0 , 1 , 2 , 4)

### 2 Answer the following:

21

**a** If the point A (-3 , 2k – 4) lies on x-axis, determine the quadrant in which the point B (k – 6 , –3K) lies on.

∵ The point A lies on the x-axis

∴ The y-coordinate = 0

∴ 2k – 4 = 0 ∴ 2k = 4 ∴ k = 2

By substituting with the value of k in the point B

You will find the point B is (–4 , –6)

The point B lies in the third quadrant

**b** From the opposite stem and leaf plot:

1. Write all the data
2. Find the mode, median, first quartile and third quartile.

| stems | leaves |
|---|---|
| 2 | 1 1 2 |
| 3 | 2 3 |
| 4 | 2 2 2 |
| 5 | 1 3 5 |

Key 3|2 means 3.2

1. 2.1 , 2.1 , 2.2 , 3.2 , 3.3 , 4.2 , 4.2 , 4.2 , 5.1 , 5.3 , 5.5
2. The mode = 4.2
   The median = 4.2
   The first quartile = 2.2
   The second quartile = 5.1

**c** If ABCD is a parallelogram , m(∠ B) = $(3x + 37)°$ , m(∠ D) = $(9x + 1)°$

What is the measure of (∠C)?

m (∠ B) = m (∠ D)

$3x + 37 = 9x + 1$

$6x = 36$ , $x = 6$

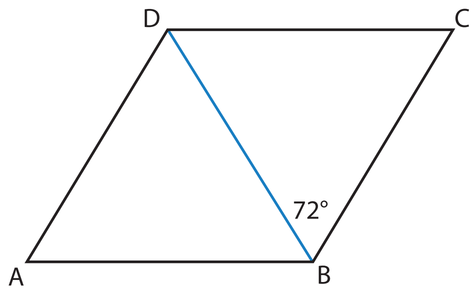
m (∠ B) = 3 × 6 + 37 = 18 + 37 = 55°

m (∠ C) = 180° – m (∠ B) = 180° – 55° = 125°

**d** In the opposite figure:

ABCD is a rhombus, m(∠ DBC) =72°

Find m (∠ A)




Proof:

ABCD is a rhombus , $\overline{BD}$ is a diagonal

m (∠ ABD) = m (∠ DBC) = 72°

m (∠ ABC) = 2 × 72 = 144°

m (∠ A) = 180° – 144° = 36°

**e** If $\frac{k}{4} = 9$ , what is the value of $\frac{1}{2}$ k – 7?

$\frac{K}{4} = 9$

K = 4 × 9 = 36

$\frac{1}{2}k - 7 = \frac{1}{2} \times 36 - 7 = 18 - 7 = 11$

**f** If 15 % of $x$ equals 20% of y , what is the ratio of $x$ : y?

$\frac{15}{100} \times x = \frac{20}{100}y$

15 × = 20 y

$\frac{x}{y} = \frac{20}{15} = \frac{4}{3}$

**g** A car uses 5 liters of petrol to cover a distance of 60 km, how much petrol would the car need to cover the distance of 180 km if it travels at the same rate?

The car needs = $\frac{5}{60} = \frac{x}{180}$

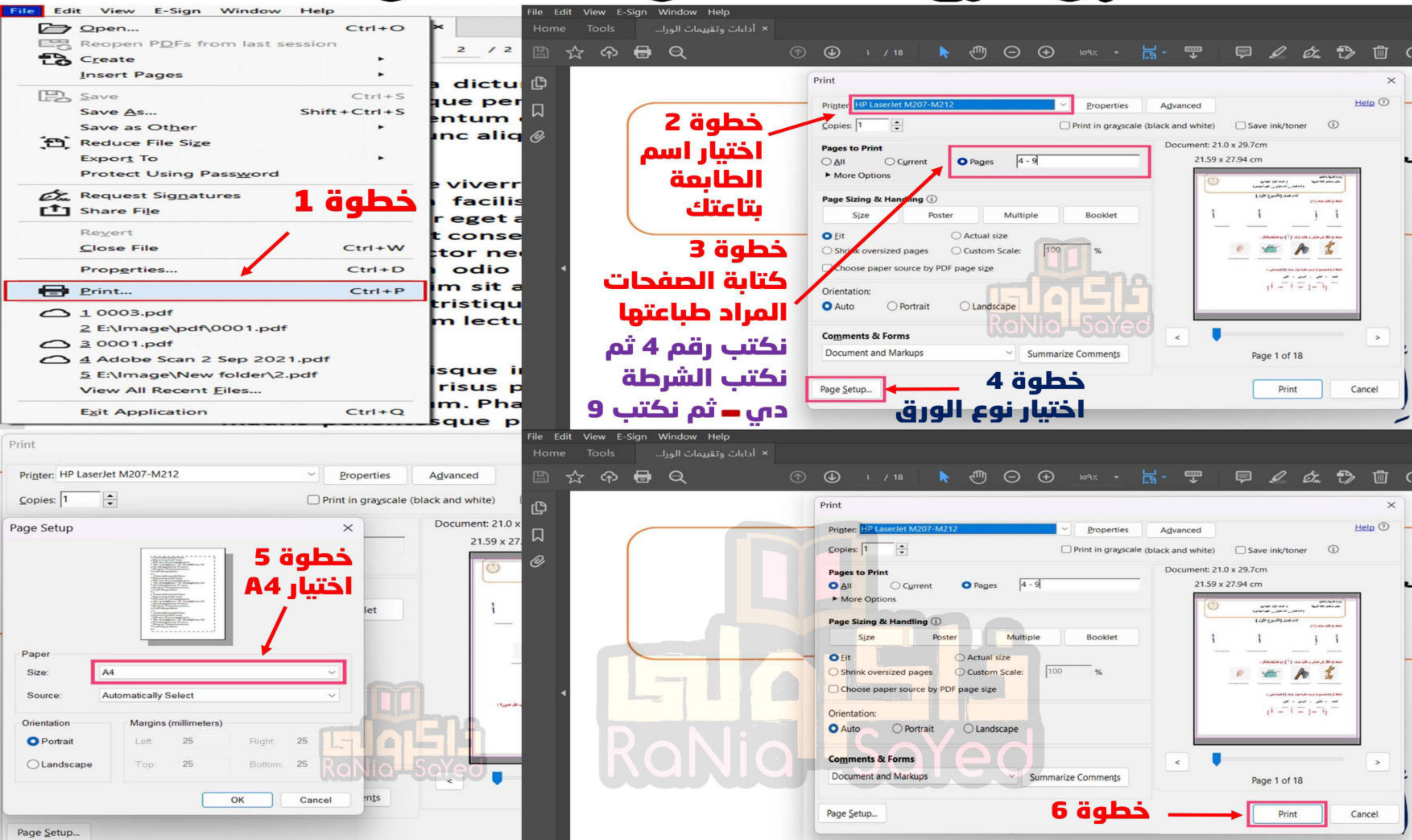
$60x = 5 \times 180$

then $x = 900 \div 60 = 15$,

then the car needs 15 liters

# كيفية طباعة صفحات معينة من ملف معين

## مثلا ازاى نطبع الصفحات من صفحة 4 الى صفحة 9




حمل الان
مجانا وحصريا
امتحانات رقم (2)
الترم الاول
ذاكرولي
RaNia SaYed
حمل
الان
حصريا

# Final Assessment — From the Schoolbook

## First Group of Questions

**Choose the correct answer from the given ones :**

**1** If $\frac{9}{k+1} = \frac{3}{5}$ , what is the value of k ?

(a) 13 (b) 14 (c) 15 (d) 16

**2** What is the solution set of the equation : $4(2x + 7) = 12$ in $\mathbb{N}$ ?

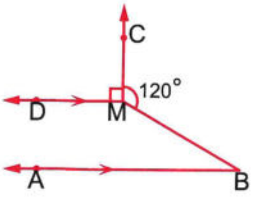
(a) $\{2\}$ (b) $\{-2\}$ (c) $\{-4\}$ (d) $\varnothing$

**3** **In the figure below :**

$\overrightarrow{MC} \perp \overrightarrow{MD}$ , $\overrightarrow{BA} // \overrightarrow{MD}$

and m ($\angle$ BMC) = 120°

What is the measure of $\angle$ B?




(a) 20° (b) 30° (c) 50° (d) 70°

**4** If a map scale is 1 : 200,000 and the distance between two points on the map is 3.5 cm , what is the real distance between these two points in kilometers ?

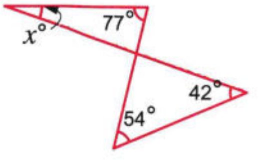
(a) 3.5 (b) 7 (c) 8.5 (d) 700

**5** $-3-(-2) =$ ..................

(a) $-5$ (b) $-1$ (c) 1 (d) 5

**6** **In the opposite figure :**

What is the value of $x$ ?

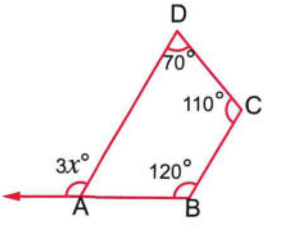



(a) 19° (b) 32°

(c) 48° (d) 60°

**7** **In the opposite figure :**

ABCD is a quadrilateral , what is the value of $x$ ?




(a) 40° (b) 50°

(c) 60° (d) 70°

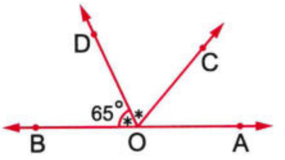
## Second Group of Questions

► **Choose the correct answer from the given ones :**

1. Which of the equations below is not equivalent to $4x + 5 = 9$ ?

(a) $3x = 3$ (b) $4x + 1 = 5$ (c) $x - 1 = 5$ (d) $x + 1 = 2$

2. **In the opposite figure :**

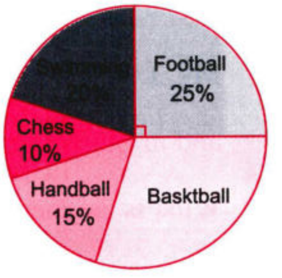



What is the measure of ∠ DOA?

(a) 50° (b) 80°

(c) 115° (d) 130°

3. The opposite pie chart illustrates the distribution of students' preferences for summer activities. If there are 200 students participating in all activities , how many students chose basketball ?




(a) 30 (b) 50

(c) 60 (d) 70

4. How many axes of symmetry are there in a regular hexagon ?

(a) 2 (b) 3 (c) 4 (d) 6

5. If point (4 , 3) is the midpoint of $\overline{AB}$ , where A ($x$ , 5) and B (2 , y) , what is the value of ($x$ + y) ?

(a) 3 (b) 5 (c) 7 (d) 9

6. Which of the following is equal to 8 y ?

(a) 5 + 3 y (b) 3 + 5 y (c) 8 + y (d) 3 y + 5 y

7. If the price of a product is reduced from 2,000 LE to 1,700 LE , what is the discount rate ?

(a) 10 % (b) 15 % (c) 25 % (d) 27 %

## Third Group of Questions

► **Answer the following Questions :**

1. **Simplify the expression :** $3(a - 2b) - 2(a + b)$

Then find the value of the expression when $a = 5$ and $b = -1$

2 Three persons participated in a project with a capital of 750,000 LE.

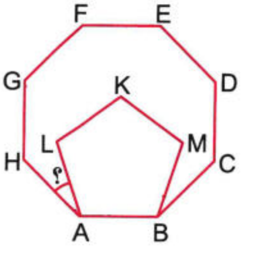
It was divided in the ratio 4 : 5 : 3 Calculate the share of each person in the capital.

3 **If the masses of a group of students in kilogram are listed on following table :**

| **Weight (Kgs)** | 72 | 73 | 75 | 76 | 77 | 78 |
|---|---|---|---|---|---|---|
| **Frequency** | 1 | 3 | 5 | 3 | 6 | 2 |

Calculate the arithmetic mean of the masses of these students.

4 **In the opposite figure :**

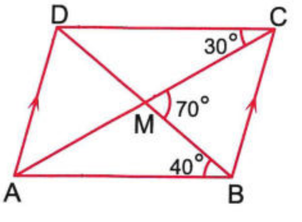



ABCDEFGH is a regular octagon ,

and ∠ ABMKL is a regular pentagon.

**Find with proof :** m (∠ HAL)

5 **In the opposite figure :**




$\overline{AC} \cap \overline{BD} = \{M\}$

**Prove that :** ABCD is a parallelogram.

# Final exams

## Model 1

### First Group

► **Choose the correct answer from the given ones :**

1 The value of the expression : $(5\,x - 8)$ when $x = -1$ is ............

(a) $-13$ (b) $-3$ (c) $3$ (d) $13$

2 If $x : 36 = 25 : 20$ , then what is the value of $x$ ?

(a) 14 (b) 28.8 (c) 45 (d) 60

3 If $x \notin \{2 , 5 , 7\}$ , so which of the following could it be equal to $x$ ?

(a) 1 (b) 2 (c) 5 (d) 7

4 What is the type of the angle that complements a right angle ?

(a) Acute (b) obtuse (c) Zero (d) Straight

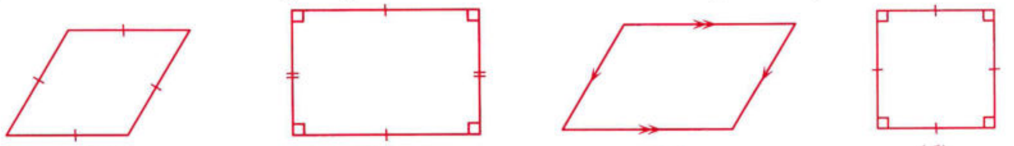
5 What is the multiplicative inverse of $-3\,\frac{1}{2}$ ?

(a) $-\frac{7}{2}$ (b) $-2\,\frac{1}{3}$ (c) $\frac{-2}{7}$ (d) $\frac{2}{7}$

6 Which of the following scales in equivalent to "every 1 cm in the drawing represents 6.5 km in reality ?

(a) 1 : 6,500,000 (b) 1 : 6.5 (c) 1 : 650,000 (d) 1 : 6,500

7 Which of the following shapes doesn't have an axis of symmetry ?



(a) (b) (c) (d)

### Second Group

► **Choose the correct answer from the given ones :**

1 The solution set for : $13 + 5\,x = 3$ in $\mathbb{N}$ is ............

(a) $\{-2\}$ (b) $\{-1\}$ (c) $\{2\}$ (d) $\varnothing$

2 What is the point that represents the projection of the point $(-3 , 5)$ on the $x$-axis ?

(a) $(0 , 5)$ (b) $(-3 , 0)$ (c) $(3 , -5)$ (d) $(-3 , 5)$

3 Which of the following numbers cannot be the lengths of the sides of a triangle ?

(a) 4 cm , 7 cm , 4 cm (b) 3 cm , 4 cm , 7 cm

(c) 7 cm , 7 cm , 7 cm (d) 9 cm , 7 cm , 5 cm

4 $a + a + a + a =$ ……………

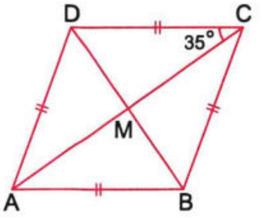
(a) $4a^4$ (b) $a^4$ (c) $4 + a$ (d) $4a$

5 If the arithmetic mean of a student's grades in five exams is 94 , and their grades in the first four exams are 91 , 94 , 92 , and 97 , what is their grade in the fifth exam ?

(a) 90 (b) 93 (c) 96 (d) 98

6 **In the opposite figure :**

What is the measure of ∠ CBD ?

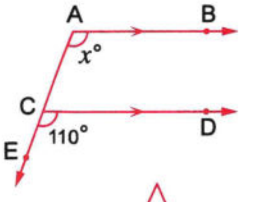



(a) 35° (b) 45°

(c) 55° (d) 65°

7 **In the opposite figure :**

What is the value of $x$ ?



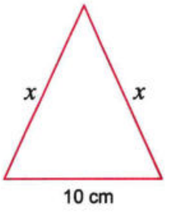

(a) 70° (b) 90°

(c) 110° (d) 130°

## Third Group

► **Answer the following questions :**

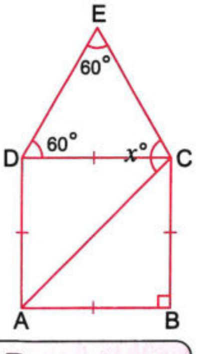
1 If the perimeter of the adjacent triangle is 34 cm , what is the value of $x$ ?




2 If the price of a television is 12,600 LE after a 16 % discount , what was the price of the television before the discount ?

3 **In the opposite figure :**

Calculate with prove the value of $x°$ ?




4 In a survey conducted among a group of first preparatory grade students about their favourite color , the results were recorded in the opposing table. Draw a pie chart to represent this table.

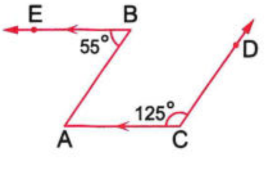
| Favorite Color | Percentage |
|---|---|
| Red | 25 % |
| Blue | 30 % |
| Green | 10 % |
| Yellow | 35 % |

5 **In the opposite figure :**

$\overrightarrow{CA} // \overrightarrow{BE}$

m (∠ B) = 55° , m (∠ C) = 125°

**Prove that :** $\overrightarrow{AB} // \overrightarrow{CD}$



# Model 2

## First Group

► **Choose the correct answer from the given ones :**

1. Which of the following operations has the same result : $2\frac{2}{3} \div \left(-1\frac{3}{7}\right)$

   (a) $2\frac{2}{3} \times \left(-1\frac{7}{3}\right)$ (b) $2\frac{2}{3} + 1\frac{3}{7}$ (c) $-2\frac{2}{3} \times \frac{7}{10}$ (d) $-1\frac{3}{7} + 2\frac{2}{3}$

2. An isosceles triangle has two sides with lengths of 4 cm and 8 cm. What is the length of the third side ?

   (a) 4 cm (b) 5 cm (c) 6 cm (d) 8 cm

3. If $\frac{1}{3} = \frac{2}{b+1}$ , then what is the value of b ?

   (a) 2 (b) 3 (c) 4 (d) 5

4. What is the mathematical expression that represents subtracting (– 2) from $x$ ?

   (a) $x - 2$ (b) $2 - x$ (c) $-2 - x$ (d) $x + 2$

5. If angles A and B are complementary and m (∠ A) = 40° what is the measure of ∠ B ?

   (a) 40° (b) 50° (c) 90° (d) 140°

6. If the point (4 , 3) is the midpoint of $\overline{AB}$ , where B (2 , y) and A ($x$ , 5) , what is the value of ($x$ + y) ?

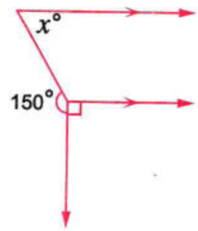
   (a) 3 (b) 5 (c) 7 (d) 9

7. **In the opposite figure :**

   $x$ = ...............

   (a) 60° (b) 90°

   (c) 120° (d) 50°




## Second Group

► **Choose the correct answer from the given ones :**

1. Which of the following represent the solution set : 2 ($x$ – 5) = 0 in $\mathbb{Q}$ ?

   (a) 0 (b) 5 (c) – 5 (d) 10

2. If the actual length is 90 meters and the scale is 1 : 10,000 , what is the length in the drawing in centimeters ?

   (a) 0.09 cm (b) 90 cm (c) 9 cm (d) 0.9 cm

3. Which of the following sets of quadrilaterals have all their sides are equal in length ?

   (a) {Square , Rectangle} (b) {Trapezoid , Rhombus}

   (c) {Square , Rhombus} (d) {Rectangle , Rhombus}

4 If A = $\{8, 9, 6\}$ , B = $\{2, 6, 7\}$ What is the set that represents A $\cap$ B ?

(a) $\{6\}$ (b) $\{2, 7\}$ (c) $\{8, 9\}$ (d) $\{2, 6, 7, 8, 9\}$

5 The additive inverse of the expression : $3x - 2y + 8$ is ..............

(a) $-3x - 2y + 8$ (b) $-3x + 2y + 8$ (c) $-3x + 2y - 8$ (d) $3x + 2y - 8$

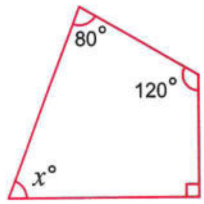
6 When representing the following table with a pie chart , what is the measure of the central angle for the coffee sector ?

| Drink | Coffee | Tea | Juice |
|---|---|---|---|
| People | 100 | 350 | 150 |

(a) 45° (b) 90° (c) 120° (d) 150°

7 **In the opposite figure :**

What is the value of $x$ ?



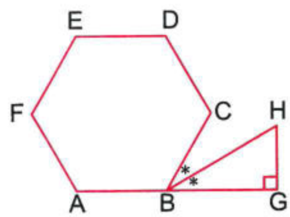

(a) 70° (b) 80°

(c) 90° (d) 120°

## Third Group

► **Answer the following questions :**

1 **In the opposite figure :**




ABCDEF is a regular hexagon.

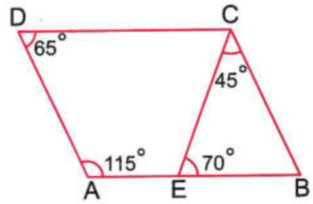
**Find with proof :** m (∠ H)

2 A teacher of mathematics wrote an integer on the board , and then he wrote another number , which was 17 less than twice the first number. If the sum of both numbers is 112 , what number did the teacher initially write ?

3 An amount of 7,200 LE was divided among three people in the ratio of 5 : 4 : 3.

Find each person's share

4 **In the following figure :**




**Prove that :** ABCD is a parallelogram.

5 **The following data represents the number of children's toys sold by a store over 30 days ?**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 13 | 32 | 12 | 33 | 27 | 37 | 44 | 8 | 26 | 32 |
| 36 | 41 | 45 | 9 | 38 | 16 | 46 | 48 | 29 | 15 |
| 13 | 32 | 33 | 14 | 18 | 28 | 34 | 25 | 7 | 18 |

Represent these sales using a stem-and-leaf plot.

## Model 3

### First Group

► **Choose the correct answer from the given ones :**

1. Which of the following is equal to – 5 ?

(a) $0 \div (-5)$ (b) $1 \div (-5)$ (c) $-25 \div (-5)$ (d) $-25 \div 5$

2. If the price of an item decreased from 1,500 LE to 1,200 LE , what is the discount rate ?

(a) 3 % (b) 15 % (c) 20 % (d) 30 %

3. If $x < 0$ and $y > 0$ , in which quadrant does the point $(x , -y)$ lie ?

(a) First (b) Second (c) Third (d) Fourth

4. Which of the following equations has no solution in $\mathbb{Z}$ ?

(a) $6x = 12$ (b) $6x = 15$ (c) $6x = 18$ (d) $6x = 24$

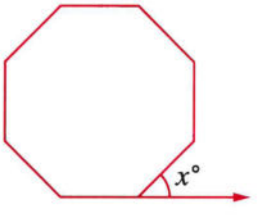
5. Magdy can run 75 meters in 25 seconds. If he maintained his speed , which proportion you can use to find the time ($x$) he needs to run 300 meters ?

(a) $\frac{75}{25} = \frac{x}{300}$ (b) $\frac{75}{25} = \frac{300}{x}$ (c) $\frac{25}{x} = \frac{300}{75}$ (d) $\frac{75}{x} = \frac{300}{25}$

6. What is the type of the angle that supplements an acute angle ?

(a) Acute (b) Obtuse (c) Straight (d) Reflex

7. **In the opposite figure :**




The shape is a regular octagon. What is the value of $x$ ?

(a) 35° (b) 45°

(c) 75° (d) 135°

### Second Group

► **Choose the correct answer from the given ones :**

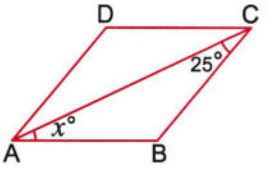
1. If the sum of two angles in a triangle is 130° , what is the measure of the third angle ?

(a) 20° (b) 30° (c) 50° (d) 60°

2. Which inequality expresses that Bassem requires a minimum of 10 gigabytes per month to accomplish his work online ?

(a) $x < 10$ (b) $x > 10$ (c) $x \leq 10$ (d) $x \geq 10$

3. **In the opposite figure :**

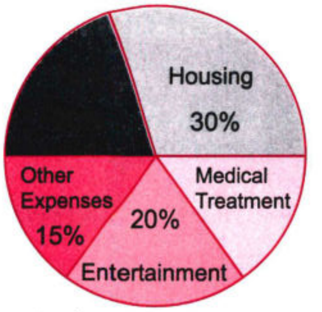



ABCD is a rhombus. What is the value of $x$ ?

(a) 25° (b) 50°

(c) 100° (d) 130°

4 The opposite figure shows a pie chart for the expenditure of a family whose monthly income is 10,000 LE.




The monthly medical treatment expenses are .............. LE

(a) 1,500 (b) 2,000

(c) 2,500 (d) 3,000

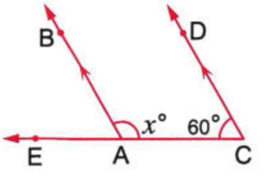
5 The result of adding the two expressions : $-3y - x - 4z$ , $x + 3y - 4z$ is ..............

(a) zero (b) $-8z$ (c) $8z$ (d) $2x - 6y + 8z$

6 If $\{4, 5, 7\} \subset \{3, x, 4, y, 8\}$ , then what is the value of $x + y$ ?

(a) 5 (b) 7 (c) 8 (d) 12

7 **In the opposite figure :**




What is the value of $x$ ?

(a) 150° (b) 120°

(c) 110° (d) 60°

## Third Group

► **Answer the following questions :**

1 Three persons invested in the construction of a factory. The first person paid 9,000,000 LE , the second person paid 6,000,000 LE , and the third person paid 7,500,000 LE.
At the end of the first year , the profits amounted to 2,250,000 LE , and the profits were distributed based on each person's capital contribution. Calculate the share of the first year's profit for each person.

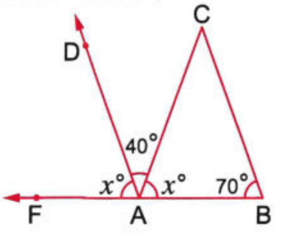
2 The opposite table shows the number of minutes a group of people spends on phone calls.

| **Minutes** | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| **Frequency** | 12 | 20 | 36 | 20 | 12 |

Calculate the average number of minutes a person spends on phone conversations.

3 If my mother's age now is three times my age , and she is 24 years older than me , how old is each of us now ?

4 **In the opposite figure :**

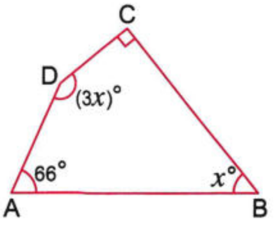



m (∠ CAD) = 40°

, m (∠ B) = 70°

**Prove that :** $\overrightarrow{AD} \parallel \overrightarrow{BC}$

5 **In the opposite figure :**




Calculate with proof the value of $x$

# Model 4

## First Group

► **Choose the correct answer from the given ones :**

1. For a set of data : $\Sigma (f \cdot X) = 1{,}500$ , $\overline{X} = 20$ , What is the value of $\Sigma f$ ?

   (a) 75 (b) 150 (c) 3,000 (d) 30,000

2. The solution set of the equation : $4 (X + 2) = 12$ in $\mathbb{Z}$ is ..............

   (a) $\{-1\}$ (b) $\{1\}$ (c) $\{-2\}$ (d) $\{2\}$

3. If the point $(3 , k - 2)$ lies on the $X$-axis , what is the value of k ?

   (a) $-3$ (b) $-2$ (c) 2 (d) 3

4. Which algebraic expression is equivalent to the following : $2X - 3 - 4X + 1$ ?

   (a) $2X - 2$ (b) $-2X + 2$ (c) $-6X - 4$ (d) $-2 - 2X$

5. A piece of land measuring 36 feddans was divided between two people in the ratio of 7 : 2 Which of the following could be the share of one of the people ?

   (a) 4 feddans (b) 14 feddans (c) 18 feddans (d) 28 feddans

6. What is the measure of the angle that supplements the angle measuring $34° 60'$ ?

   (a) 55° (b) 56° (c) 145° (d) 146°

7. Which of the following angles must be one of the interior angles of a polygon for it to be concave ?

   (a) Straight (b) Acute (c) Right (d) Reflex

## Second Group

► **Choose the correct answer from the given ones :**

1. If $\frac{5}{7} = \frac{30}{X + 1}$ , then what is the value of $X$ ?

   (a) 40 (b) 41 (c) 42 (d) 43

2. If ABC is a scalene triangle where the length of $\overline{AC}$ is 3 cm and the length of $\overline{BC}$ is 5 cm , how many integer values can the length of $\overline{AB}$ have ?

   (a) 2 (b) 3 (c) 4 (d) 5

3. The value of the expression : $3k - 4m + 1$ when $k = -1$ , $m = -2$ is ..............

   (a) Zero (b) 3 (c) 6 (d) 5

4. If $A = \{5 , 7\}$ , how many subsets does the set A have ?

   (a) 2 (b) 4 (c) 6 (d) 8

5 If ABCD is a parallelogram where : AC = BD , $\overline{AC} \perp \overline{BD}$

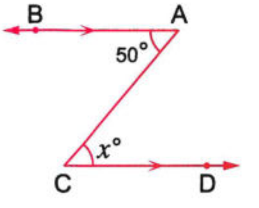
, then the shape ABCD will be ...............

(a) trapezium. (b) rhombus. (c) rectangle. (d) square.

6 Which of the following is equivalent to the subtraction of : $-5-(-8)$ ?

(a) $5-8$ (b) $8-5$ (c) $5+8$ (d) $-5-8$

7 **In the opposite figure :**




What is the value of $x$ ?

(a) 40° (b) 50°

(c) 60° (d) 130°

**Third Group**

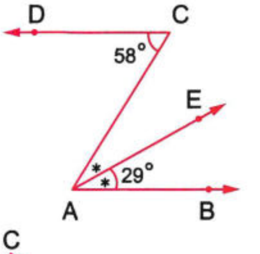
▶ **Answer the following questions :**

1 Four persons purchased tickets to the Egyptian Museum in Cairo. They also purchased souvenirs for 500 LE , if the total cost is 620 LE , write the equation expressing this situation. What is the price of one ticket ?

2 If the scale on the map is 1:600,000 and the distance between two points on the map is 4.5 cm , find the real distance between the two points.

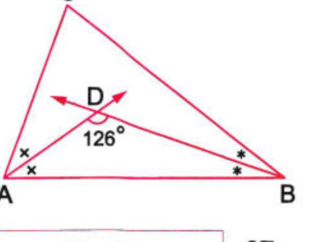
3 Online retail sales are growing rapidly. If the highest online retail sales are 50% for travel , 20% for clothing and footwear , 15% for computer devices and software , 10% for automobiles and spare parts , and 5% for home furnishings , draw a pie chart to represent online sales.

4 **In the opposite figure :**




**Prove that :** $\overrightarrow{AB} // \overrightarrow{CD}$

5 **In the opposite figure :**




Find m (∠ C) with proof.

# Model 5

## First Group

► **Choose the correct answer from the given ones :**

1. $\frac{2x+1}{9} = \frac{10}{18}$ , then what it is the value of $x$ ?

   (a) 1 (b) 2 (c) 4 (d) 5

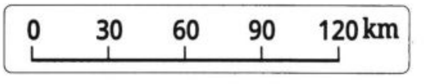
2. If $A = \{8, 9, 6\}$ , $B = \{2, 6, 7\}$ , then what is the set that represents $A \cup B$ ?

   (a) $\{6\}$ (b) $\{2, 7\}$ (c) $\{8, 9\}$ (d) $\{2, 6, 7, 8, 9\}$

3. The solution set in $\mathbb{Z}$ for the expression $2(4x - 1) + 10 = 0$ is ...............

   (a) $\{-2\}$ (b) $\{-1\}$ (c) $\{1\}$ (d) $\{2\}$

4. If the scale of a map is as shown in the opposite figure and the distance between two cities on this map is 3 cm , what is the actual distance between them ?

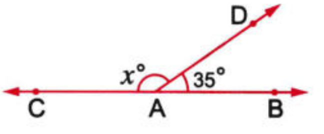



   (a) 30 km (b) 1,200,000 cm (c) 90 km (d) 90,000 cm

5. **In the opposite figure :**

   If $A \in \overleftrightarrow{BC}$

   What is the value of $x$ ?




   (a) 55° (b) 85° (c) 125° (d) 145°

6. What is the number of axes of symmetry in a regular hexagon ?

   (a) 2 (b) 3 (c) 4 (d) 6

7. From the opposite stem-and-leaf plot , what is the median ?

| Stem | Leaves |
|---|---|
| 0 | 9 |
| 1 | 0 2 2 2 3 4 5 6 6 |
| 2 | 0 1 1 5 7 8 9 |
| 3 | 1 2 3 |
| **Key** | **3 \| 2 means 32** |

   (a) 16 (b) 17 (c) 18 (d) 20

## Second Group

► **Choose the correct answer from the given ones :**

1. Two consecutive numbers have a sum of 29. Which of the following equations represents this ?

   (a) $x + x + 2 = 29$ (b) $x + x + 1 = 29$ (c) $x + x - 1 = 28$ (d) $x + x + 1 = 30$

2 Which of the following sums has a positive sign ?

(a) 19 + (– 26) (b) – 35 + 17 (c) – 25 + (– 12) (d) 40 + (– 18)

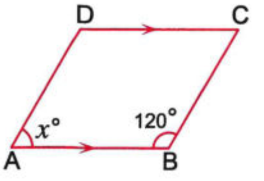
3 If the origin is the midpoint of $\overline{AB}$ , and point A is located in the second quadrant , in which quadrant is point B located ?

(a) First (b) Second (c) Third (d) Fourth

4 If the measures of two angles in a triangle are 30° and 70° , which of the following cannot be the measure of an exterior angle of this triangle ?

(a) 150° (b) 130° (c) 110° (d) 100°

5 **In the following figure :**




What is value of $x$ that makes the shape ABCD a parallelogram ?

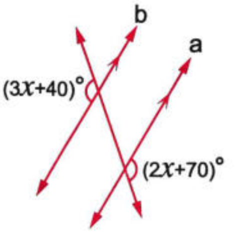
(a) 109° (b) 120°

(c) 80° (d) 60°

6 What is the inequality expressing that the suitable height (n) cm of a person should not be less than 180 cm to join one of the sports ?

(a) n < 180 (b) n > 180 (c) n ≤ 180 (d) n ≥ 180

7 **In the opposite figure :**




What is the value of $x$ ?

(a) 20° (b) 30°

(c) 40° (d) 50°

## Third Group

▶ **Answer the following questions :**

1 Write the expression : 7 m – 3 n – 5 m + 4 n in its simplest form.

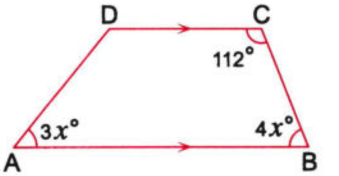
2 A man passed away , leaving 150,000 LE for his wife , two sons , and one daughter. If his wife's share is $\frac{1}{8}$ of the total amount , and the remaining sum is to be distributed among his children , what is the share of each son and the daughter , considering the ratio of a son to a daughter is 2 : 1 ?

**3** **The following table shows the number of working hours for a group of workers :**

| Number of hours ($x$) | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|
| Number of workers ($f$) | 12 | n | 30 | 39 | 16 | 9 |

Find the number of workers who work 6 hours , knowing that the arithmetic mean of the working hours is 7.5 hours.

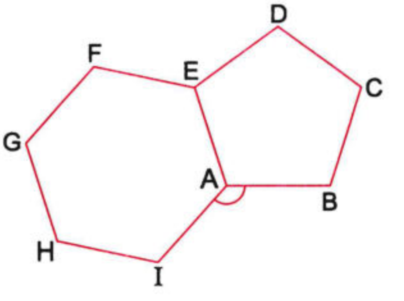
**4** **In the opposite figure :**




ABCD is a trapezium.

**Find with Prove :** m (∠ D).

**5** **In the opposite figure :**




A regular pentagon and a regular hexagon.

**Find with prove the value of :** m (∠ IAB).

# Model 6

## First Group

► **Choose the correct answer from the given ones :**

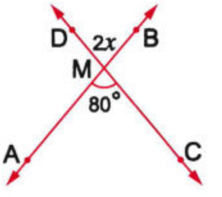
**1** Which of the following does not represent a proportion ?

(a) $\frac{4}{7} = \frac{8}{14}$ (b) $\frac{5}{6} = \frac{3}{3.6}$ (c) $\frac{2}{3} = \frac{4}{9}$ (d) $\frac{5}{3} = \frac{10}{6}$

**2** Which of the following equations is equivalent to the equation 2 n + 1 = 3 ?

(a) n + 2 = 6 (b) 2 n = 4 (c) 2 n = 2 (d) n + 1 = $\frac{3}{2}$

**3** **In the opposite figure :**




If $\overleftrightarrow{CD} \cap \overleftrightarrow{AB} = \{M\}$

, then what is the value of $x$ ?

(a) 20° (b) 40°

(c) 80° (d) 160°

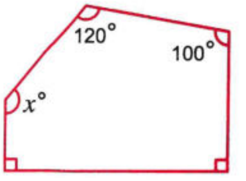
**4** Which of the following are similar algebraic terms ?

(a) $3x , -3x^2$ (b) 3 y , 6 y (c) $x$ , y (d) 5 , 5 $x$

**5** A dolphin dove from the surface of the water to a depth of $3\frac{1}{4}$ meters , then dove another $2\frac{1}{4}$ meters. Which of the following does not represent the dolphin's position relative to the surface of the water ?

(a) $-3\frac{1}{4} + \left(-2\frac{1}{2}\right)$ (b) $-3\frac{1}{4} + \left|-2\frac{1}{2}\right|$ (c) $-3\frac{1}{4} - 2\frac{1}{2}$ (d) $-\left(3\frac{1}{4} + 2\frac{1}{2}\right)$

**6** **In the opposite figure :**




What is the value of $x$ ?

(a) 120° (b) 140°

(c) 150° (d) 135°

**7** In an isosceles triangle , the lengths of two sides are 3 cm and 7 cm. What is the length of the third side ?

(a) 3 cm (b) 4 cm (c) 5 cm (d) 7 cm

## Second Group

**► Choose the correct answer from the given ones :**

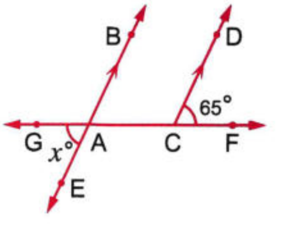
**1** The solution set of : $4x + 9 = 3 + 2x$ in $\mathbb{Q}$ is ..............

(a) $\{-3\}$ (b) $\{-1\}$ (c) $\{1\}$ (d) $\{3\}$

**2** If $A = \{2, 5, 8\}$ , then which statement is correct ?

(a) $\{2\} \in A$ (b) $\{3\} \notin A$ (c) $\{5\} \subset A$ (d) $\{5, 8\} \not\subset A$

**3** **In the opposite figure :**




If $\overleftrightarrow{FG} \cap \overleftrightarrow{BE} = \{A\}$

, then what is the value of $x$ ?

(a) 25° (b) 55°

(c) 65° (d) 115°

**4** Sandy scored 18 , 17 , 16 , 15 , and 18 in five mathematics tests. If the teacher removes the lowest score , which of the following is true?

(a) The average decreases (b) The median decreases

(c) The average increases (d) The average does not change

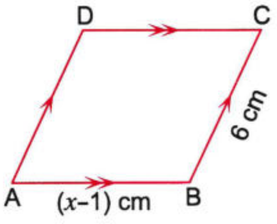
**5** If the scale is 1 : 1,000 and the length on the drawing is 2.5 cm , what is the actual length in meters ?

(a) 0.25 meters (b) 25 meters (c) 2.5 meters (d) 250 meters

**6** What is the projection of the point $(-3, 5)$ on the y-axis ?

(a) $(0, 5)$ (b) $(-3, 0)$ (c) $(3, -5)$ (d) $(-3, 5)$

**7** **In the opposite figure :**




What is the value of $x$ that makes ABCD a rhombus ?

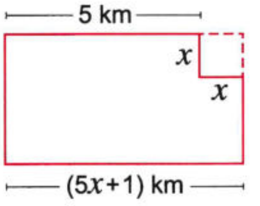
(a) 5 (b) 6

(c) 7 (d) 8

## Third Group

► **Answer the following questions :**

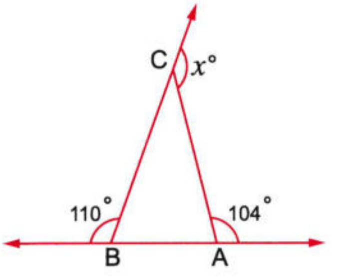
**1** In light of the State's focus on expanding agricultural land , a rectangular desert plot has been reclaimed. From this plot , a square area with side length $x$ km has been devoted to create a farm for development of animal wealth. What is the value of $x$ in kilometres ?




**2** Sandy received a 15% discount on the price of a pair of athletic shoes from a store , and she paid 340 LE. What was the original price of the shoes ?

**3** **In the opposite figure :**

Find the value of $x$ with proof.

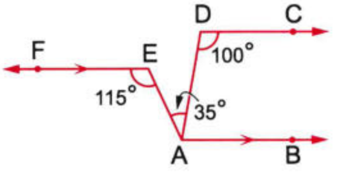



**4** **If the favorite sports of 80 students are shown in the following table :**

| **Sport** | Football | Handball | Tennis | Swimming |
|---|---|---|---|---|
| **Frequency** | 36 | 12 | 12 | 20 |

Represent this data using a pie chart.

**5** **In the opposite figure :**




$\overrightarrow{AB} // \overrightarrow{EF}$ , m ($\angle$ D) = 100°

, m ($\angle$ E) = 115° , m ($\angle$ DAE) = 35°

**Prove that :** $\overrightarrow{AB} // \overrightarrow{DC}$

# Model 7

## First Group

► **Choose the correct answer from the given ones :**

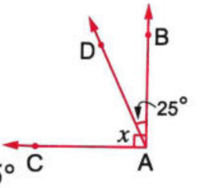
1 The sum of the following expressions : $-4x+6$ , $3x-2$ is ..............

(a) $7x+8$ (b) $7x+4$ (c) $-x+4$ (d) $-x-4$

2 Which of the following products has a negative sign ?

(a) $-3 \times (-9)$ (b) $-2 \times 5$ (c) $0 \times (-5)$ (d) $-1 \times (-1)$

3 **In the opposite figure :**




If $\overrightarrow{AC} \perp \overrightarrow{AB}$

Then what is the value of $x$ ?

(a) 35° (b) 65° (c) 80° (d) 155°

4 If $\{3, 6, 7, x\} = \{6, y, 3, 5\}$ , then what is the value of $y - x$ ?

(a) $-12$ (b) $-2$ (c) 2 (d) 12

5 What is the suitable equation to find the side length of an equilateral triangle with a perimeter of 12 centimeters ?

(a) $x+3=12$ (b) $3x=12$ (c) $2x=12$ (d) $x=12$

6 What is the measure of the interior angle of a regular polygon with 10 sides ?

(a) 108° (b) 120° (c) 135° (d) 144°

7 If $\frac{x}{20} = \frac{3}{4}$ , then what is the value of $x$ ?

(a) 5 (b) 8 (c) 10 (d) 15

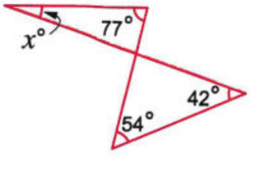
## Second Group

► **Choose the correct answer from the given ones :**

1 If A (3 , 1) , B (3 , –1) , so which of the following points is the midpoint for $\overline{AB}$ ?

(a) (0 , 3) (b) (3 , 0) (c) (6 , 0) (d) (0 , 6)

2 **In the opposite figure :**




What is the value of $x$ ?

(a) 19° (b) 32°

(c) 48° (d) 60°

3 The solution set for : $0.\overline{3}\,x + 3 = 12$ in $\mathbb{Q}$ is ..............

(a) {30} (b) {27} (c) {24} (d) {21}

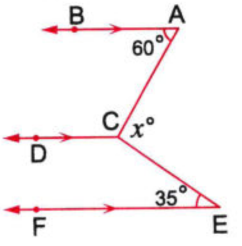
**4** If the arithmetic mean of five integers is 14 , the median is 15 , and the mode is 11 , the largest of these numbers is ……………

(a) 14 (b) 16 (c) 17 (d) 18

**5** If the length in the drawing is 2 cm and the real length is 6 meters , what is the scale drawing ?

(a) 1 : 3 (b) 1 : 30 (c) 1 : 300 (d) 1 : 3,000

**6** **In the opposite figure :**




What is the value of $x$ ?

(a) 35° (b) 60°

(c) 95° (d) 105°

**7** A parallelogram in which the diagonals are perpendicular and equal in length is ……………

(a) Rhombus (b) rectangle (c) Square (d) Trapezium

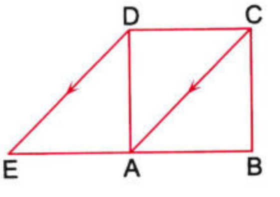
## Third Group

► **Answer the following questions :**

**1** If $\frac{k}{4} = 9$ , what is the value of $\frac{1}{2}$ k – 7 ?

**2** If the lengths of two sides of a triangle are 5 cm and 2 cm , what is the largest integer that can represent the length of the third side ?

**3** **In the opposite figure :**




ABCD is a square , E $\in \overrightarrow{BA}$ , $\overline{AC} // \overline{ED}$

**Prove that :** AE = AB

**4** **Alloys :** Medals are made of a bronze alloy consisting of three metals , copper , tin , and zinc , in the ratio of $\frac{1}{5} : \frac{1}{18} : \frac{1}{45}$ . Given that the mass of one medal is 425 grams , calculate the mass of each of the three metals.

**5** **The following shows the height in centimeters for 32 students :**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 134 | 152 | 140 | 134 | 130 | 142 | 131 | 144 |
| 144 | 132 | 147 | 143 | 135 | 135 | 145 | 137 |
| 148 | 151 | 133 | 142 | 136 | 138 | 132 | 146 |
| 140 | 139 | 141 | 148 | 130 | 144 | 149 | 139 |

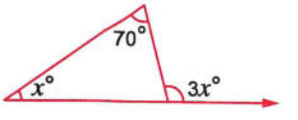
Construct a cumulative frequency table using the intervals (130 – , 135 – , ….) , and then represent it with a histogram

# Model 8

## First Group

► **Choose the correct answer from the given ones :**

1 **In the opposite figure :**




What is the value of $x$ ?

(a) 70° (b) 140° (c) 35° (d) 100°

2 If A = $\{4, 2, 7\}$, and B $\subset$ A so which of the following can represent set B ?

(a) $\{4, 6\}$ (b) $\{1, 3, 5\}$ (c) $\{4, 3, 7\}$ (d) $\{7, 2\}$

3 Eman reads 10 pages in 40 minutes. How much time , in hours , would it take her to read a book if 120 pages if she reads at the same rate ?

(a) 8 (b) 16 (c) 80 (d) 480

4 Which of the following charts does not show the actual values of the data ?

(a) Dot plot (b) Histogram

(c) Stem-and-leaf plot (d) Bar chart

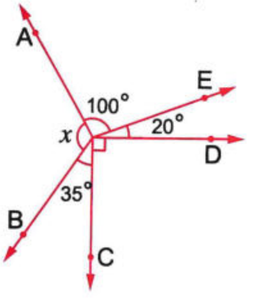
5 The solution set for : $7 = 2(x + 3)$ in $\mathbb{Z}$ is ..............

(a) $\{\frac{1}{2}\}$ (b) $\{\frac{3}{2}\}$ (c) $\{\frac{5}{2}\}$ (d) $\varnothing$

6 Two complementary angles have a ratio of 2 : 3. The measure of the smaller angle is ..............

(a) 18° (b) 36° (c) 54° (d) 90°

7 **In the opposite figure :**




What is the value of $x$ ?

(a) 75° (b) 105°

(c) 115° (d) 135°

## Second Group

► **Choose the correct answer from the given ones :**

1 Which of the following is equal to 5 a ?

(a) 3 + 2 a (b) 2 + 3 a (c) 2 a + 3 a (d) 5 + a

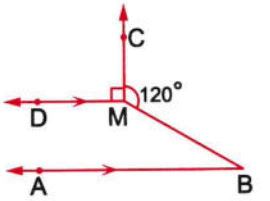
2 If $\frac{-5}{12} - \left(\frac{-7}{6}\right) = \frac{1}{6} + x$ , then what is the value of $x$ ?

(a) $\frac{7}{12}$ (b) $\frac{5}{6}$ (c) $-\frac{5}{12}$ (d) $-\frac{7}{12}$

3 If the ratio of Ahmed's and Mostafa's shares of the profits in a business project is 2 : 3 , and Ahmed's share is 6,000 pounds , what is Mostafa's share?

(a) 4,000 LE (b) 5,000 LE (c) 9,000 LE (d) 13,000 LE

4 **In the opposite figure :**




$\overrightarrow{MC} \perp \overrightarrow{MD}$ , $\overrightarrow{BA} \parallel \overrightarrow{MD}$

$m(\angle BMC) = 120°$

What is the measure of $\angle B$ ?

(a) 20° (b) 30° (c) 50° (d) 70°

5 The measure of an interior angle of a regular hexagon is ..............

(a) 108° (b) 120° (c) 135° (d) 145°

6 A parallelogram in which the diagonals are equal in length is a ..............

(a) Rhombus. (b) Rectangle. (c) Square. (d) Trapezoid.

7 Ziad is now $x$ years old , and 7 years ago was 18 years old.
Which of the following equations represents the situation ?

(a) $x + 7 = 25$ (b) $x - 7 = 11$ (c) $x + 7 = 18$ (d) $x - 7 = 18$

## Third Group

► **Answer the following questions :**

1 If the price of a mobile phone in a store is 12,750 LE and its price was reduced by 8 % , what will be the price after the discount ?

2 A football field is rectangular in shape , and its length is 15 meters less than twice its width. If its perimeter is 330 meters , find the dimensions of the field.

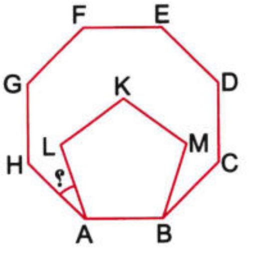
3 **The table shows the weights of 42 students in a class (in kilograms) :**

| Weight | 40 | 42 | 43 | 45 | 46 | 48 | 49 | 50 | 51 |
|---|---|---|---|---|---|---|---|---|---|
| Frequency | 3 | 6 | 4 | 9 | 7 | 4 | 4 | 3 | 2 |

Find the mean weight of the students.

4 Given A (– 7 , 13) and B (3 , 5) , find the coordinates of the points that divide $\overline{AB}$ into four equal parts.

5 **In the opposite figure :**




ABCDEFGH is a regular octagon.

, ABMKL is a regular pentagon.

Find with proof the value of the angle m (∠ HAL)

# Model 9

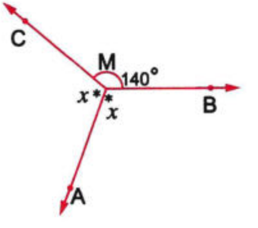
## First Group

► **Choose the correct answer from the given ones :**

1 The solution set of the equation : $\frac{1}{2} x + 4 = 7$ in $\mathbb{Q}$ is ..............

(a) $\{\frac{1}{2}\}$ (b) $\{\frac{3}{2}\}$ (c) $\{4\}$ (d) $\{6\}$

2 **In the opposite figure :**




What is the value of $x$ ?

(a) 220° (b) 130°

(c) 110° (d) 100°

3 If $x \in \{2, 5, 8\}$ , what is the value that $x$ cannot equal ?

(a) 2 (b) 3 (c) 5 (d) 8

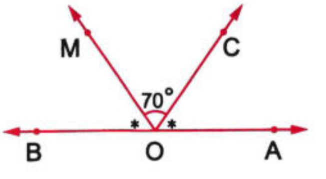
4 If the arithmetic mean of the numbers $x + 2$ , $x - 5$ , $2x + 4$ , 8 , $x + 1$ is 7 , what is the value of $x$ ?

(a) 2 (b) 3 (c) 5 (d) 8

5 The value of 3 (2 n – m) when n = 2 , m = – 2 is ..............

(a) 2 (b) 4 (c) 6 (d) 18

6 **In the opposite figure :**




If $O \in \overleftrightarrow{AB}$

, then the measure of m (∠ AOM) = ..............

(a) 55° (b) 70° (c) 110° (d) 125°

7 If the point (a , b) is located in the third quadrant , then the quadrant in which the point (– 2 a , b – 6) is located is ..............

(a) First (b) Second (c) Third (d) Fourth

## Second Group

► **Choose the correct answer from the given ones :**

1 Which of the following equals $\frac{3}{5} + \frac{-2}{3}$ ?

(a) $\frac{1}{8}$ (b) $\frac{1}{15}$ (c) $\frac{-6}{15}$ (d) $\frac{-1}{15}$

2 The diagonals bisect the interior angles in which of the following ?

(a) Rhombus and Rectangle (b) Square and Rectangle

(c) Rhombus and Square (d) Square and Parallelogram

3 If 15 % of $x$ equals 20 % of y , what is the ratio of $x$ : y ?

(a) 5 : 4 (b) 3 : 2 (c) 4 : 3 (d) 3 : 4

4 Which of the following are like algebraic terms ?

(a) $2x , -2x^2$ (b) 3 a , 8 a (c) $7x , 7$ (d) $x^2 , y^2$

5 Alaa bought a mobile phone for 6,750 LE and sold it for 7,776 LE.

What is Alaa's percentage profit ?

(a) 13 % (b) 15.2 % (c) 16.1 % (d) 18.6 %

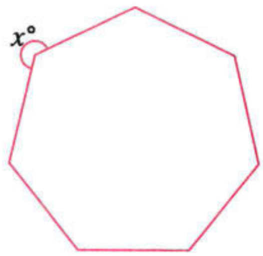
6 **In the opposite figure :**

A regular heptagon

What is the value of $x$ ?

(a) $128 \frac{4}{7}$ (b) $174 \frac{4}{7}$

(c) $211 \frac{3}{7}$ (d) $231 \frac{3}{7}$

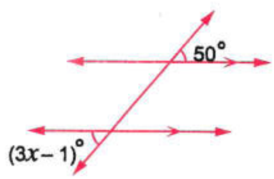



7 **In the opposite figure :**

What is the value of $x$ ?

(a) 51° (b) 50°

(c) 35° (d) 17°

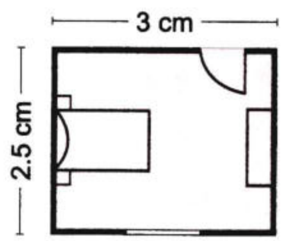



**Third Group**

► **Answer the following questions :**

1 A school has $(8x + 15)$ girls and $(7x - 10)$ boys. Write a mathematical expression that shows how much more the number of girls than the number of boys in the school.

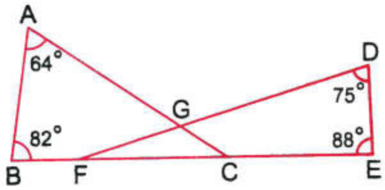
2 The opposite figure represents a room model , where every 1 cm in the model represents 1.2 m in reality. What is the room's real area ?



3 **In the opposite figure :**

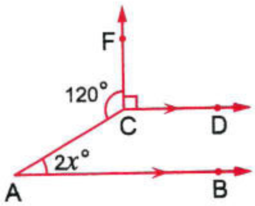
If F , C $\in \overline{BE}$

**Find :** m (∠ FGC)




4 **In the opposite figure :**

**Find with proof the value of :** $x$




5 **A shopping mall recorded sales activity during the day with the following results :**

| Market Components | Percentage |
|---|---|
| Food products | 45 % |
| Dairy | 35 % |
| Juices and beverages | ............ |
| Sweets | 5 % |

Represent this data using a pie chart.

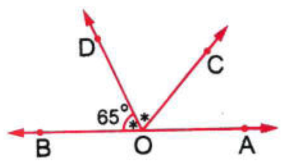
## Model 10

### First Group

▶ **Choose the correct answer from the given ones :**

1 **In the opposite figure :**

What is the measure of ∠ DOA ?

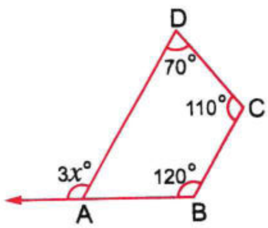



(a) 50° (b) 80° (c) 115° (d) 130°

2 **In the opposite figure :**

ABCD is a quadrilateral.

What is the value of $x$ ?




(a) 40° (b) 50°

(c) 60° (d) 70°

3 Which of the following expressions has the same product as $\frac{-3}{8} \times \frac{8}{3}$ ?

(a) $2\frac{1}{4} \times \frac{4}{9}$ (b) $\frac{-2}{5} \times 3\frac{1}{2}$ (c) $-\frac{1}{4} \times (-4)$ (d) $2\frac{1}{2} - 3.5$

4 What is the appropriate equation to calculate the price of a shirt when buying 3 shirts of the same kind from an online store , if the total cost is 490 LE including 40 LE for shipping ?

(a) $x + 40 = 490$ (b) $3(x + 40) = 490$ (c) $x + 120 = 490$ (d) $3x + 40 = 490$

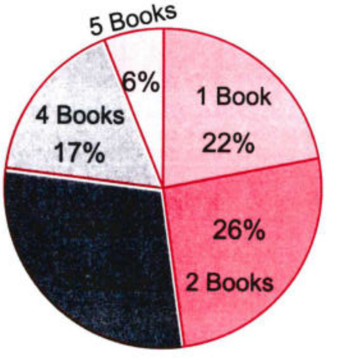
5 If the number of elements in A ⋃ B is 5 , the number of elements in A cannot be ...............

(a) 3 (b) 4 (c) 5 (d) 6

6 How many lines of symmetry does a regular polygon with 9 sides have ?

(a) 9 (b) 7 (c) 18 (d) 11

7 The pie chart shows the number of books read by 300 students in the school. How many students read fewer than 4 books ?




(a) 51 (b) 77

(c) 231 (d) 282

**Second Group**

► **Choose the correct answer from the given ones :**

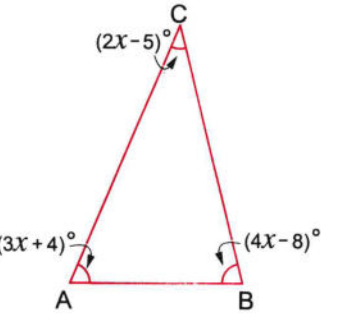
1 In which quadrant is the point(3 , – 4) located ?

(a) First (b) Second (c) Third (d) Fourth

2 Omar bought 6 apples for 105 LE. How many apples of the same type can he buy for 245 LE ?

(a) 12 (b) 14 (c) 18 (d) 20

3 **In the opposite figure :**




What is the value of m (∠ B) ?

(a) 76°

(b) 81°

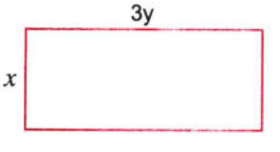
(c) 84°

(d) 89°

4 If – 7 k = 28 , what is the value of 3 k + 6 ?

(a) – 6 (b) – 4 (c) 4 (d) 6

5 What is the algebraic expression for the perimeter of the opposite rectangle ?




(a) $x + 3y$ (b) $2x + 6y$

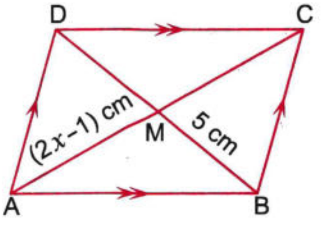
(c) $y + 3x$ (d) $2y + 6x$

6 Two friends participated in a business project with a profit-sharing ratio of 2 : 5. If the smaller share of the profits is 18,000 LE , what is the total profit in LE ?

(a) 45,000 LE (b) 63,000 LE (c) 9,000 LE (d) 24,000 LE

7 **In the opposite figure :**

What is the value of $x$ that makes the parallelogram ABCD a rectangle ?




(a) 2 (b) 3

(c) 4 (d) 5

## Third Group

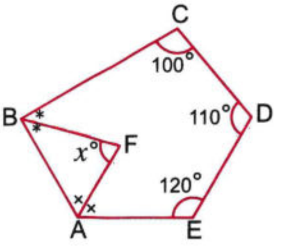
▶ **Answer the following questions :**

1 **Find the solution set of the equation in $\mathbb{Q}$ :** $4\left(\frac{1}{2}x-2\right)=4x+6$

2 Omar subscribed to a home internet service for 520 LE per month , with an additional 14 % tax on the service price. What is the tax amount and the total amount Omar pays monthly ?

3 **In the opposite figure :**

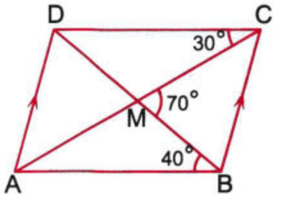
Find with proof the value of $x$




4 **In the opposite figure :**

$\overline{AC} \cap \overline{BD} = \{M\}$

**Prove that :** ABCD is a parallelogram.




5 The opposite table shows the salaries of a group of company employees in LE.

The company owner asserted that the average salary is 6,500 LE.

Explain why the average salary is misleading and gives the impression that salaries are higher than their actual values for most employees.

| Salaries in LE | |
|---|---|
| Employee (1) | 25,000 |
| Employee (2) | 4,000 |
| Employee (3) | 3,000 |
| Employee (4) | 2,500 |
| Employee (5) | 2,500 |
| Employee (6) | 2,000 |



مجانا وحصريا
حمل الان
امتحانات رقم (3)
الترم الاول
ذاكرولي
RaNia SaYed
حمل
الان
حصريا

# MODEL EXAM NO (1)

**[Q1] Choose the correct answer:**

**(1)** If $\frac{9}{k+1} = \frac{3}{5}$ , then the value of K is ............

a) 13 b) 14 c) 15 d) 16

**(2)** The solution set of the equation 4( 2 X + 7 ) = 12 in N is ......

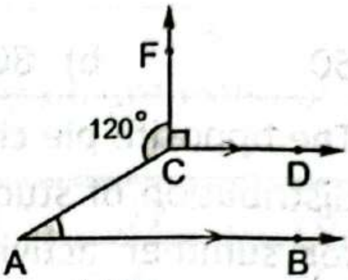
a) { 2 } b) {− 2 } c) {− 4 } d) ∅

**(3)** In the opposite figure:

$\overline{AB} // \overline{CD}$ , $\overline{CF} \perp \overline{CD}$

M ( ∠ ACF ) = 120°

Then m ( ∠ A ) = ...........°




a) 20 b) 30 c) 50 d) 70

**(4)** If the drawing scale of the map is 1:200000 and the distance between two points on the map is 3.5 cm, then the real distance between two points in kilometer is ............... km

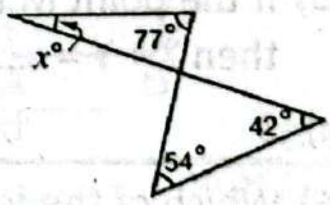
a) 3.5 b) 7 c) 1 d) $\frac{1}{2}$

**(5)** − 3 − ( − 2 ) = ...........

a) − 5 b) − 1 c) 1 d) 5

**(6)** In the opposite figure:

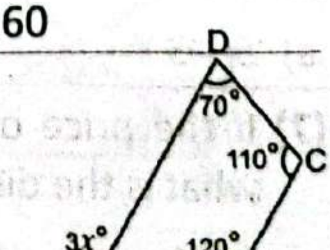
The value of X is .............°




a) 19 b) 32 c) 48 d) 60

**(7)** In the opposite figure:

The value of X is .............°




a) 40 b) 50 c) 60 d) 70

**[Q2] Choose the correct answer:**

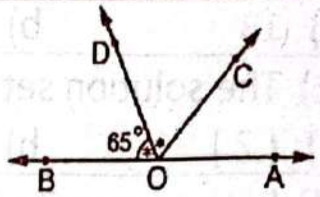
**(1)** Which of the following equations doesn't equivalent to equation $4X + 5 = 9$?

a) $3X = 3$    b) $4X + 1 = 5$    c) $X - 1 = 5$    d) $X + 1 = 2$

---

**(2)** In the opposite figure:

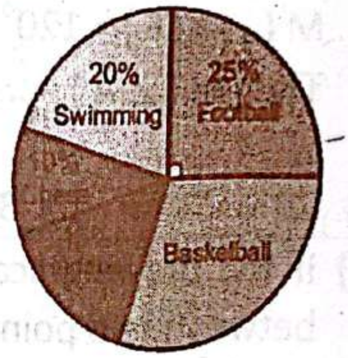
M ( ∠ DOA ) = ............... °




a) 50    b) 80    c) 115    d) 130

---

**(3)** The opposite pie chart illustrates the distribution of student's preferences for summer activities. If there are 200 students participating in all the activities, how many students choose basketball?




a) 30    b) 50    c) 60    d) 70

---

**(4)** Number of axes of symmetry of regular hexagon is ............

a) 2    b) 3    c) 4    d) 6

---

**(5)** If the point M ( 4 , 3 ) is midpoint of $\overline{AB}$ where A ( x , 5 ) , B (2,Y) then X + Y = ........

a) 3    b) 5    c) 7    d) 9

---

**(6)** Which of the following equal 8 Y?

a) $5 + 3Y$    b) $3 + 5Y$    c) $8 + Y$    d) $3Y + 5Y$

---

**(7)** If the price of a product is reduced from 2000 LE to 1700 LE, what is the discount rate?

a) 10 %    b) 15 %    c) 25 %    d) 27 %

**[Q3] Answer the following questions:**

[1] Simplify the expression: 3 ( a − 2 b ) − 2 ( a + b ), then find the value of expression if a = 5 , b = − 1

[2] Three persons participated in a project with a capital of 750,000LE. It was divided in the ratio of 4 : 5 : 3. Calculate the share of each person in the capital.

[3] If the masses of a group of students in kilogram are listed on the following table:

| Mass (KG) | 72 | 73 | 75 | 76 | 77 | 78 |
|---|---|---|---|---|---|---|
| Frequency | 1 | 3 | 5 | 3 | 6 | 2 |

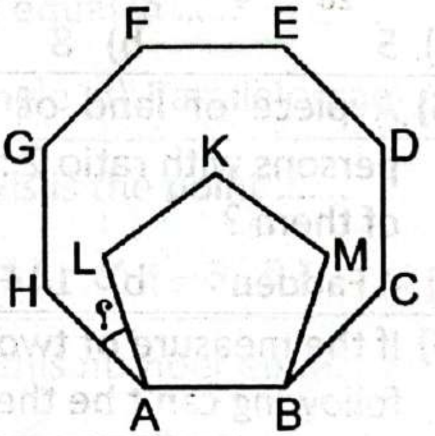
[4] In the opposite figure:

ABCDEFGH is a regular octagon

And ABMKL is a regular pentagon

Find with proof:

M ( ∠ HAL )

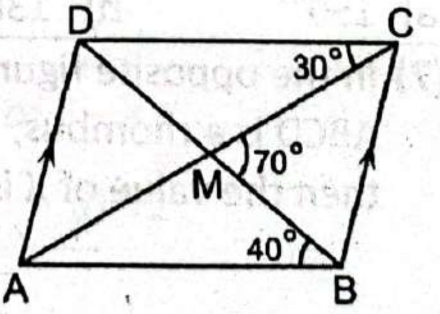



[5] In the opposite figure:

$\overline{AC} \cap \overline{BD} = \{ M \}$

Prove that:

ABCD is a parallelogram




End of the questions

# MODEL EXAM NO (2)

**[Q1] Choose the correct answer:**

(1) The multiplicative inverse of the number $-3\frac{1}{2}$ is ............

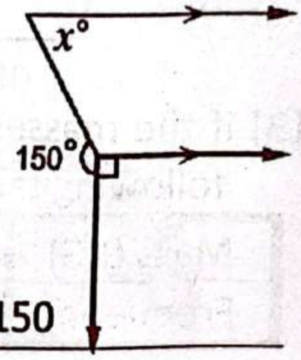
a) $-\frac{7}{2}$  b) $-2\frac{1}{3}$  c) $-\frac{2}{7}$  d) $\frac{2}{7}$

(2) Which of the following equations has no solution?

a) 6 X = 12  b) 6 X = 15  c) 6 X = 18  d) 6 X = 24

(3) In the opposite figure:

The value of X = ..............°




a) 30  b) 60  c) 120  d) 150

(4) If $\frac{X}{20} = \frac{3}{4}$, then value of X is ................

a) 5  b) 8  c) 10  d) 15

(5) A piece of land of area 36 Fadden is divided between two persons with ratio 2 : 7, which of the following may share of one of them ?

a) 4 Fadden  b) 14 Fadden  c) 18 Fadden  d) 28 Fadden

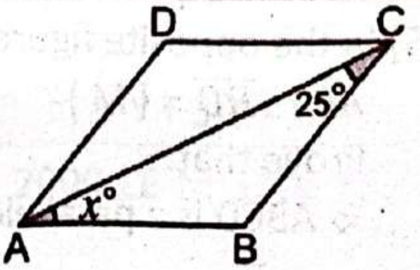
(6) If the measure of two angle of triangle are 30°, 70°, which of the following can't be the measure of exterior angle?

a) 150°  b) 130°  c) 110°  d) 100°

(7) In the opposite figure:

ABCD is a rhombus,

then the value of X is ............°




a) 25  b) 50  c) 100  d) 130

**[Q2] Choose the correct answer:**

**(1)** Which inequality expresses that the appropriate height in cm for choosing a person to practice a sport must not be less than 180 cm?

a) $X < 180$  b) $X > 180$  c) $X \leq 180$  d) $X \geq 180$

---

**(2)** If the two complementary angles are vertically opposite angle, then measure of each on is ...............°

a) 30  b) 45  c) 90  d) 180

---

**(3)** For some data, if $\bar{X} = 20$ , $\sum(f.x) = 1500$,

Then the value of $\sum f$ = ............

a) 75  b) 150  c) 300  d) 30000

---

**(4)** The two diagonals are perpendicular and equal in ......

a) Square  b) Rhombus  c) Rectangle  d) Parallelogram

---

**(5)** The projection of the point (–3,5) on X-axis is the point .......

a) ( 0 , 5 )  b) ( – 3 , 0 )  c) ( 3 , – 5 )  d) ( – 3 , 5 )

---

**(6)** If three times a number is 27, then third this number equals ....

a) 3  b) 1  c) $\frac{3}{2}$  d) $\frac{9}{4}$

---

**(7)** If { 6 , 3 , Y , 5 } = { 3 , 6 , 7 , X }, then value of Y – X = ...........

a) – 12  b) – 2  c) 2  d) 12

---

[Q3] Answer the following questions:

[1] Find the result of:

5 a + 2 b − 3 c , 4 a + b − c , 3 a − 2 b + 6 c

[2] If the drawing scale of the map is 1:4000000, and the real distance between two cities is **350** KM. find the distance between two cities on the map

[3] The following table shows the number of minutes some people spend on phone calls:

| *Minutes* | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| *Frequency* | 12 | 20 | 36 | 20 | 12 |

↳ Calculate the average number of minutes that a people spend on phone calls.□

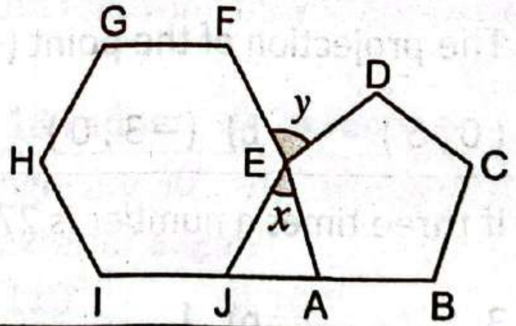
[4] In the opposite figure:

ABCDE is regular pentagon

EFGHIJ is regular hexagon,

$A \in \overline{IB}$, $j \in \overline{IB}$

Find with proof value of X, Y




[5] If ABCD is a parallelogram where A ( − 1 , 1 ) , B ( 4 , 2 ) , D ( 1 , 4 )

Find the coordinate of:

① Intersection point of two diagonal

② The coordinate of vertex C

End of the questions

# MODEL EXAM NO (3)

**[Q1] Choose the correct answer:**

**(1)** If the length of drawing is 2 cm and the real length 6 m, then the drawing scale is …………

a) 1 : 3  b) 1 : 30  c) 1 : 300  d) 1 : 3000

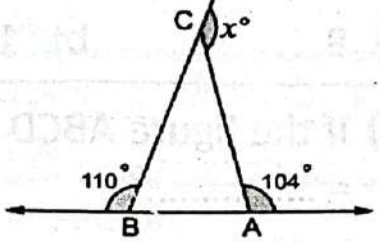
**(2)** $|-5| +$ ……………… = 0

a) − 5  b) 5  c) 0  d) 1

**(3)** Which of the following is solution in Q of equation: $6(X-3)=0$

a) 0  b) 2  c) 3  d) 6

**(4)** In the opposite figure:
The value of X is …………°




a) 146  b) 164  c) 120  d) 150

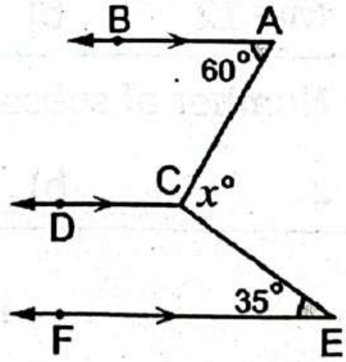
**(5)** If $\frac{30}{x+1} = \frac{5}{7}$, then the value of X is ……………

a) 40  b) 41  c) 42  d) 43

**(6)** An isosceles triangle, length of two sides are 3 cm , 7 cm, then the length of third side equals ……………… cm

a) 3  b) 4  c) 5  d) 7

**(7)** In the opposite figure:
$\overrightarrow{AB} // \overrightarrow{CD} / \overrightarrow{EF}$
Then the value of X = ………..°




a) 25  b) 50  c) 100  d) 130

**[Q2] Choose the correct answer:**

**(1)** Which inequality expresses that Basem needs at least 10 GB per month to complete his work online?

a) $X < 10$ b) $X > 10$ c) $X \leq 10$ d) $X \geq 10$

---

**(2)** The ratio between two supplementary angles is 4 : 5, then the measure of smallest angle is ..............

a) 40 b) 50 c) 80 d) 100

---

**(3)** If the arithmetic mean between the lengths of sides of triangle is 8 cm, then the perimeter of triangle equals .................. cm

a) 8 b) 15 c) 18 d) 24

---

**(4)** If the figure ABCD is a rhombus, m ( $\angle$ ACB ) = $32^\circ$, then m ( $\angle$D) = ...............$^\circ$

a) 32 b) 26 c) 64 d) 116

---

**(5)** If the point ( X , 7 ) lies on Y-axis, then the value of 5 X + 1 is ....

a) 0 b) 1 c) 5 d) 6

---

**(6)** If the perimeter of rectangle is 24 cm, and its length M cm, then the width of rectangle equals ................ Cm

a) M – 12 b) 12 – M c) 12 + M d) 12 M

---

**(7)** Number of subsets of the set A = { 6 , 4 } equals .............

a) 2 b) 4 c) 6 d) 8

---

◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆

**[Q3] Answer the following questions:**

[1] What is the decrease of expression:

$$5\,a + 2\,b - 3\,c \text{ than } 6\,a - 2\,b + 7\,c$$

---

[2] If the ratio of the number of hydrogen atoms to the number of oxygen atoms in a water molecule is **2:1** then how many atoms of each are in a molecule of a drop of water that contains **1,200,000** atoms?

---

[3] In a questionnaire for a group of people about their favorite sport, the results of the questionnaire were as follows:

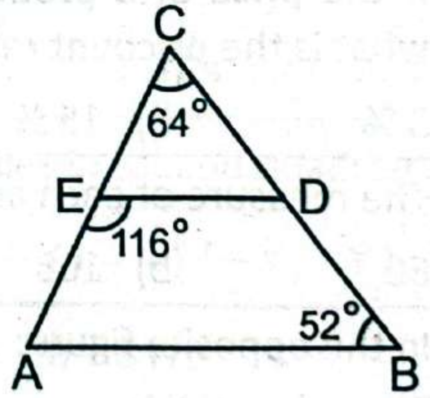
| Sports | Handball | Basketball | Football | Volleyball |
|---|---|---|---|---|
| ratio | 15 % | 25 % | 45 % | ........... |

Represent these data with circular sector.

---

[4] In the opposite figure:

Proof that $\overline{ED} \parallel \overline{AB}$




---

[5] If A (– 7, 13 ), B ( 3 , 5 ), find the coordinate of the points which divides $\overline{AB}$ into four equal parts

End of the questions

# MODEL EXAM NO (4)

## [Q1] Choose the correct answer:

**(1)** $\{2, 7\} \subset \{2, 5, X + 1\}$, then the value of X is .........

a) 2 b) 5 c) 6 d) 7

---

**(2)** If K is negative number, which of the following is greater?

a) 5 K b) − 5 K c) $\frac{5}{K}$ d) $\frac{K}{5}$

---

**(3)** If $\frac{2}{5}$X = 10, then the value of $\frac{4}{5}$X equals ...............

a) 25 b) 15 c) 20 d) 5

---

**(4)** The ratio between two supplementary angles is 5:13, then the measure of greatest angle is .........°

a) 50 b) 65 c) 130 d) 180

---

**(5)** If the price of a product is reduced from 1500 LE to 1200 LE, what is the discount rate?

a) 3 % b) 15 % c) 20 % d) 30 %

---

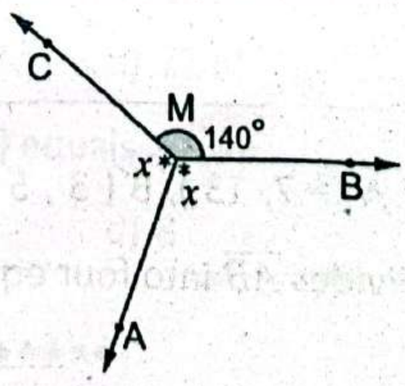
**(6)** The measure of each angle of regular hexagon equals .......°

a) 60 b) 108 c) 120 d) 135

---

**(7)** In the opposite figure:

The value of X is .......................




a) 100 b) 110 c) 140 d) 220

---

**[Q2] Choose the correct answer:**

**(1)** If the age of Ziad now is X, and its age since 7 years is 18 years, which of the following equation represents this situation?

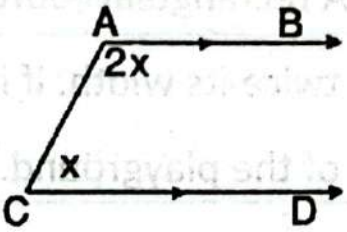
a) $X + 7 = 25$  b) $X - 7 = 11$  c) $X + 7 = 18$  d) $X - 7 = 18$

---

**(2)** In the opposite figure:

$\overrightarrow{AB} \,//\, \overrightarrow{CD}$,

The value of X is ..........°




a) 30  b) 60  c) 120  d) 150

---

**(3)** The median for the values 3 , 5 , 12 , 17 , 14, 18 is ...........

a) 12  b) 13  c) 14  d) 15

---

**(4)** The number of axes of symmetry of a parallelogram is .......

a) Zero  b) 1  c) 2  d) 4

---

**(5)** If $Y > 0$ , $X < 0$, then the point in which lies in second quadrant?

a) ( X , Y )  b) ( − X , Y )  c) ( X , − Y )  d) ( − X , − Y )

---

**(6)** The additive inverse of expression $3a - 2b + 8$ is ...........

a) $-3a-2b+8$  b) $-3a+2b+8$  c) $-3a+2b-8$  d) $3a+2b-8$

---

**(7)** If $2 \in \{ 6 , X + 1 \}$, then the value of X = ............

a) 1  b) 2  c) 6  d) zero

---

**[Q3] Answer the following questions:**

[1] What the increase of $5X + 2Y - 3K$ than $2X - 3Y + 5K$

[2] A rectangular football playground its length is 15 meters less than twice its width. If its perimeter is 330 meters, find the dimensions of the playground.

[3] The following table shows the marks of a student in exam:

| Marks | 6 | 9 | 12 | 15 | 17 |
|---|---|---|---|---|---|
| No. of students | 4 | 7 | 8 | 5 | 6 |

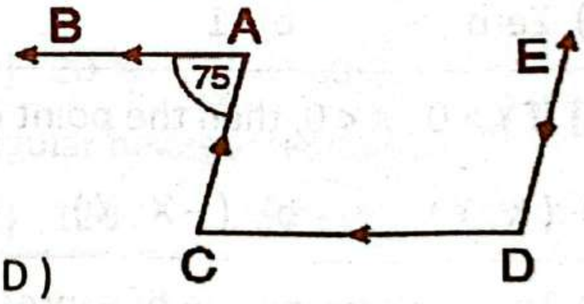
➩ Find the arithmetic mean of these marks?

[4] In the opposite figure:

$\overrightarrow{AB} \parallel \overline{CD}$, $\overrightarrow{DE} \parallel \overline{AC}$

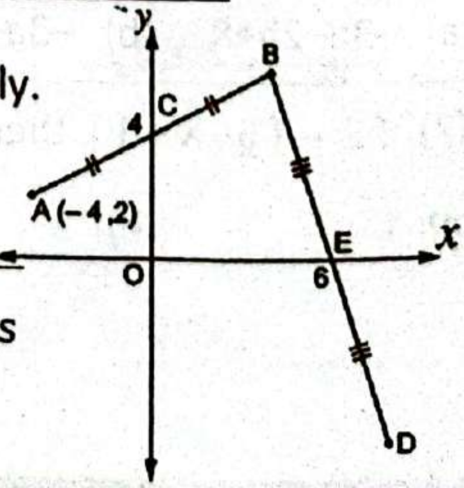
$M(\angle A) = 75^\circ$,

Find with proof $m(\angle A)$, $m(\angle D)$




[5] If E,C are midpoints of $\overline{BD}$, $\overline{AB}$ respectively.

Find the coordinate of point D.




End of the questions

# MODEL EXAM NO (5)

**[Q1] Choose the correct answer:**

(1) If : { x + 1 , 5 } = { 7 , 5 }, then x = .....

a) 4 b) 5 c) 6 d) 7

(2) If : $\frac{a}{3} = \frac{4}{b}$ then ab = .......

a) 3 b) 4 c) 7 d) 12

(3) If : $\frac{26}{k} + 1 = 14$, then the value of k = ........

a) 2 b) 10 c) 13 d) 15

(4) The acute angle complements ............ Angle

a) Zero b) Acute c) Right d) Obtuse

(5) Which of the following equals to : $\frac{8}{3} \times \frac{-3}{8}$ ?

a) $2\frac{1}{4} \times \frac{4}{9}$ b) $3\frac{1}{2} \times \frac{-2}{5}$ c) $-\frac{1}{4} \times (-4)$ d) $2\frac{1}{2} - 3.5$

(6) The outer sides of two supplementary adjacent angles are .....

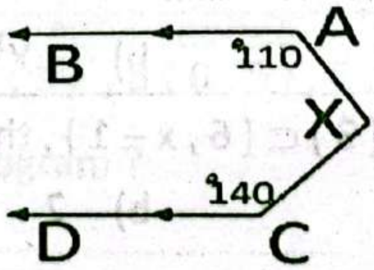
a) Coincide c) Perpendicular

b) Skew d) On the same straight line

(7) In the opposite figure:

$\overrightarrow{AB} \mathbin{//} \overrightarrow{CD}$ ,

The value of x = .........°




a) 110 b) 140 c) 160 d) 180

**[Q2] Choose the correct answer:**

(1) which of the following statement equivalent to the sum of two consecutive number is 29

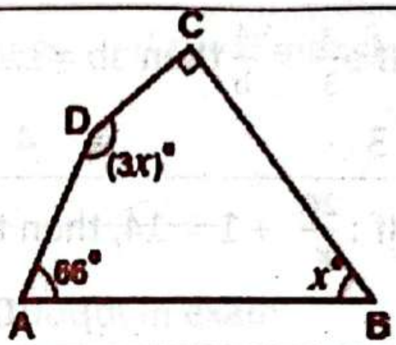
a) $X + x + 2 = 29$ c) $X + X - 1 = 28$

b) $X + X + 1 = 30$ d) $X + X + 2 = 29$

(2) In the opposite figure:

ABCD is a quadrilateral

then X = ...... °




a) 50 b) 51 c) 52 d) 53

(3) The mean of the following values ( $3 - x , 5 + 2x , 4 - x$ ) is .....

a) 3 b) 4 c) 5 d) 6

(4) The number of axes of symmetry of regular hexagon is ....

a) 3 b) 4 c) 5 d) 6

(5) If $x < 0$, $y > 0$, then the point ............ Lies in $3^{rd}$ quadrant

a) $(x, y)$ b) $(-x, y)$ c) $(x, -y)$ d) $(-x, -y)$

(6) $X + X + X =$ .......

a) $3X$ b) $3X^3$ c) $X + 3$ d) $3X$

(7) If : $\{3\} \subset \{6, x - 1\}$, then the value of x = ......

a) 1 b) 2 c) 3 d) 4

**[Q3] Answer the following questions:**

[1] If the sum of two expression $7x + 2y - 5k + 6l$, and one of them is $3x + 4y - k + 3l$ find the other expression ?

.................................................................................................

.................................................................................................

[2] find three even numbers their sum 12 ?

.................................................................................................

.................................................................................................

[3] Represent the data using Pie chart

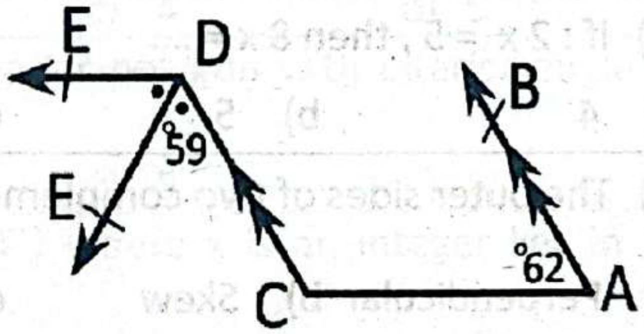
| Favorite color | Red | Blue | Green | Yellow |
|---|---|---|---|---|
| Percentage | 25 % | 30 % | 10 % | 35 % |

[4] in the opposite figure:

$\overline{AB} \parallel \overline{CD}$, m ( $\angle$ CDF ) = 59 °

m ( $\angle$ A ) = 62 ° ,

Prove that : $\overrightarrow{AC} \parallel \overrightarrow{DE}$




.................................................................................................

[E] If ABCD is a quadrilateral where A(− 1 , 1 ) , B ( 0 , 5 ) , C ( 5 , 6 ) , D ( 4 , 2 ) prove that ABCD is a parallelogram ?

.................................................................................................

.................................................................................................

End of the questions

[3] Answer the following questions:

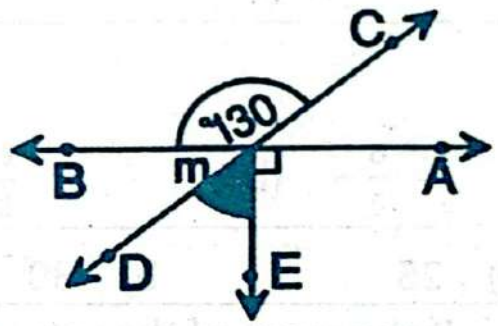
[A] Find in Q : $3(x-1)+4=3$

........................................................................................................

[B] find the sum of the following : $6x+3y-2z$ , $5x-2y+3z$ , $7x+2y-5z$ ?

---

[C] In the opposite figure :



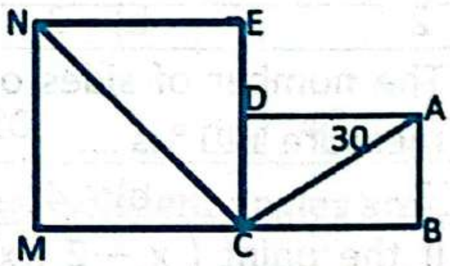

$\overline{AB} \cap \overline{CD} = \{M\}$ , $\overline{ME} \perp \overline{AB}$ ,

m ( ∠ BMC ) = 130 ° ,

Find the m ( ∠ DME ) with proof ?

---

[D] ABCD is a rectangle




ECMN is a square, m (∠ CAD ) = 30°

Find with proof m ( ∠ ACN ) ?

........................................................................................................

[E] Represent the data with suitable Cartesian diagram

| month | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| No. computer | 8 | 6 | 7 | 8 | 8 | 7 |

*End of the questions*

# MODEL EXAM NO (7)

## [1] Choose the correct answer:

**(1)** The angle of measure $50°$ supplements angle of measure ......°

a) 40 b) 130 c) 50 d) 310

**(2)** If : $x \notin \{1, 4, 3\}$ then x = .......

a) 4 b) 3 c) 2 d) 1

**(3)** If : $a \times \frac{6}{5} = 1$ , then a = ......

a) $\frac{5}{6}$ b) $-\frac{6}{5}$ c) $-\frac{5}{6}$ d) $\frac{6}{5}$

**(4)** If : $x + 3y = 7$ , then $x + 3(y + 5) =$ ........

a) 3 b) 7 c) 21 d) 22

**(5)** If : $2a + 3 = 15$ then $\frac{1}{3}a =$ ......

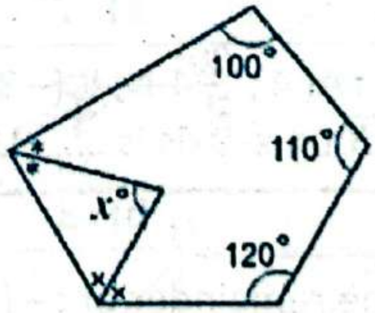
a) 2 b) 6 c) 12 d) 15

**(6)** Two straight lines are parallel to the third are ........

a) Perpendicular b) Coincides c) Parallel d) Intersecting

**(7)** In the opposite figure :

the value of x = .......°




a) 25 b) 75 c) 105 d) 110

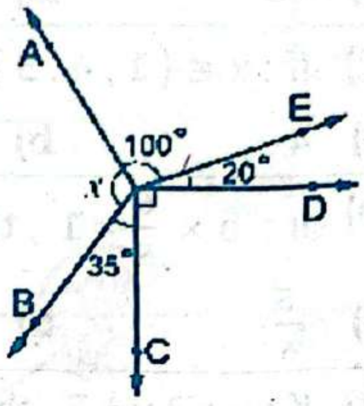
[2] Choose the correct answer:

(1) If the length in reality 90m., and the scale drawing 1 : 100,000 ,then length in drawing is .........cm.

a) 0.09 b) 90 c) 9 d) 0.9

(2) In the opposite figure :

the value of x = .......°




a) 110 b) 115 c) 120 d) 130

(3) If the mode of the following data { 9 , x+2 , 7 , 5 } is 5 then the value of x = ........

a) 2 b) 3 c) 4 d) 5

(4) If : 3 cm. ,7cm. are two lengths in a triangle then the length of the third side is .......cm.

a) 5 b) 7 c) 8 d) 9

(5) If : A( 4 , − 4 ) , B (− 3 , 2 ) then the length of the projection of $\overline{AB}$ on x- axis is ....... Unit length

a) 1 b) 3 c) 4 d) 7

(6) The remainder of : $\frac{1}{7}$ from $\frac{8}{7}$ is ......

a) 1 b) −1 c) $\frac{9}{7}$ d) $-\frac{9}{7}$

(7) If $x + \frac{3}{2} = 0$ then 2 x = .......

a) 3 b) −3 c) 2 d) - 2

[3] *Answer the following questions:*

[1] Two consecutive natural numbers, one of them is twice the other find the two numbers?

---

[2] The following data represent the number of hours of practice sports in the week

| Number of hours | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|
| frequency | 6 | 8 | 14 | 8 | 4 |

➥ Calculate the mean ?

---

[3] Add: $x - 3y + 5z$ , $3x - 5y + 4z$

➥ Then subtract the result from $8x - 3y + 5y$

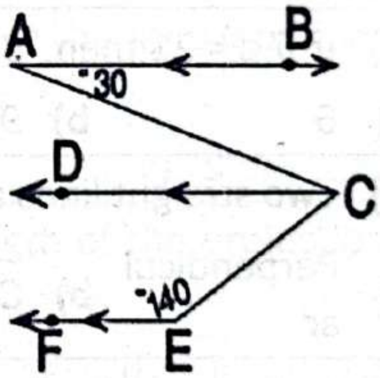
---

[4] **In the opposite figure** :

$\overrightarrow{AB} // \overrightarrow{CD} // \overrightarrow{EF}$

, m (∠ BAC ) = 30°,

m ( ∠ E) = 140°



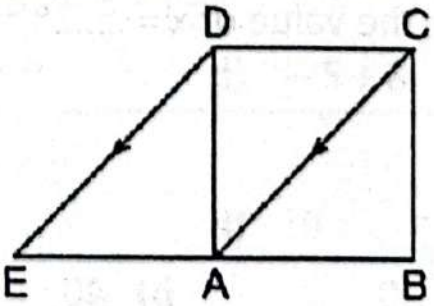

➥ Find with proof : m ( ∠ ABC )

---

[5] **In the opposite figure** :

ABCD is a square, $\overline{ED} // \overline{AC}$

Prove that: AB = EA




*End of the questions*

# MODEL EXAM NO (8)

## [1] Choose the correct answer:

**(1)** The sum of 4 accumulative angles at a point ........ The sum of 5 accumulative angles at a point

a) < b) > c) = d) Otherwise

---

**(2)** If : $\{x\} \not\subset \{1, 4, 3\}$ then x = .......

a) 4 b) 3 c) 2 d) 1

---

**(3)** $|-3| + |5| + |0| =$ ......

a) 8 b) 2 c) 0 d) $-2$

---

**(4)** If : $\frac{3}{x} = \frac{y}{2}$ , then $xy - 6 =$ ........

a) 6 b) $\frac{1}{6}$ c) 0 d) 12

---

**(5)** If 7 a = 21 then 3 a = ......

a) 6 b) 9 c) 12 d) 21

---

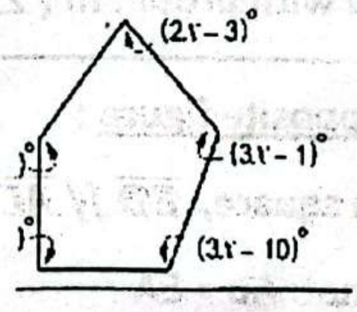
**(6)** Two straight lines are perpendicular to a third are ........

a) Perpendicular b) Coincides c) Parallel d) Intersecting

---

**(7)** In the opposite figure :

the value of x = .......°



a) 30 b) 40 c) 50 d) 60

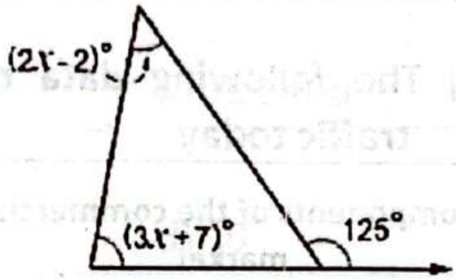
---

[2] *Choose the correct answer:*

**(1)** If the length in drawing 14 cm., and the scale drawing 1 : 300,000 ,then length in reality is .........km.

a) 40 b) 41 c) 42 d) 45

**(2)** In the opposite figure :
the value of x = .......°




a) 20 b) 24 c) 25 d) 30

**(3)** If the mean of the following data { 9 , x , 7 , 5 } is 6 then the value of x = ........

a) 2 b) 3 c) 4 d) 5

**(4)** If : 3 cm. ,7cm. are two lengths in a triangle then the length of the third side is ........cm.

a) 4 b) 5 c) 8 d) 9

**(5)** If : A( 4 , − 4 ) , B (− 3 , 2 ) then the length of the projection of $\overline{AB}$ on y- axis is ....... Unit length

a) 2 b) 3 c) 6 d) 7

**(6)** Which of the following is equivalent to $-5-(-8)$ ......

a) $5-8$ b) $8-5$ c) $5+8$ d) $-5+8$

**(7)** The solution of : $2(x-5)=0$ in Q is ......

a) 0 b) −5 c) 5 d) 10

[3] Answer the following questions:

**[1]** Two consecutive natural numbers ,one of them is thrice the other find the two numbers ?

**[2]** The following data represent the marketplaces spotted the traffic today

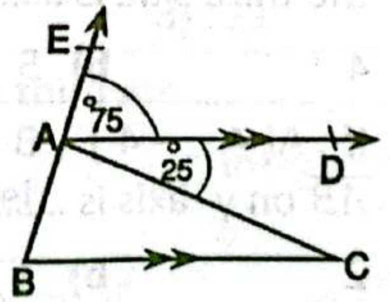
| Components of the commercial market | Sweets | Juices and drinks | Albanian | Nutrients |
|---|---|---|---|---|
| percentage | 45 % | 35 % | ....... | 5 % |

➭ Representing data by circular sectors?

**[3]** What is the increase: 3a – 5 b + 4 c than the sum of :

4a – b + 3c and 3 a – 2 b + 4 c

**[4]** In the opposite figure :



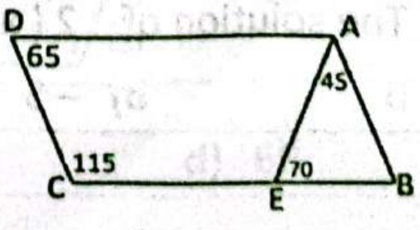

$\overrightarrow{AD} \parallel \overline{BC}$

، m (∠ EAD ) = 75°,

m ( ∠ DAC) = 25°

Find with proof: measures of the interior angle of Δ ABC

**[5]** In the opposite figure :




Prove that : ABCD is a parallelogram

*End of the questions*

# Model Exam No (9)

[1] *Choose the correct answer:*

(1) If the length in drawing 5 cm., and length in drawing 2 meters, then the scale drawing is .........cm.

a) 5 : 2 b) 2 : 5 c) 1 : 40 d) 1 : 400

(2) If : | H | = 8 then H= .......

a) 8 b) − 8 c) ± 8 d) 0

(3) Which of the following represent the solution of the equation 4 x + 7 = 9 in Q

a) $\frac{1}{2}$ b) $-\frac{1}{2}$ c) − 2 d) 2

(4) If : $\frac{12}{a-5} = \frac{3}{8}$ , then a = ........

a) 32 b) 27 c) 37 d) 14

(5) If : 2 a + 3 = 15 then $\frac{1}{3}$ a = ......

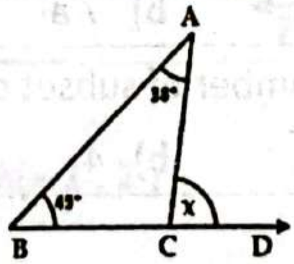
a) 2 b) 6 c) 12 d) 15

(6) If : 4 cm. ,6cm. are two lengths in a triangle then the length of the third side is .......cm.

a) 10 b) 12 c) 2 d) 5

(7) In the opposite figure :

the value of x = .......°




a) 65 b) 77 c) 56 d) 83

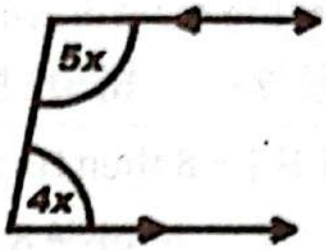
[2] Choose the correct answer:

(1) The solution of : $x > 5$ is ....

a) 0.32 b) 3 c) $-35$ d) 15

(2) In the opposite figure :

the value of x = .......°




a) 40 b) 50 c) 80 d) 100

(3) If the ratio between two complementary angles 2 : 7 then the measure of the smallest angle is ....

a) 10 b) 20 c) 70 d) 140

(4) If the mean of the following data { 8 , m , 5 } is 6 then the value of m is ........

a) 18 b) 6 c) 13 d) 3

(5) If A( x + 2, y − 3 ) is the origin point then x + y = .......

a) 1 b) 3 c) 5 d) $-2$

(6) The side length of the rhombus whose perimeter 28 a cm. is .....

a) A − 28 b) 7 a c) $49\ a^2$ d) 28 a − 4

(7) The number of subset of the set A = { 3 , 1 , 6 } is ....

a) 2 b) 4 c) 6 d) 8

[3] Answer the following questions:

[1] Hisham , Salman and Walid setup a timer trading company in the ratio 2 : 3 : 1 if the profit were to be 120,000 find the share of each one ?

---

[2] The following data represent the number of hours of practice sports in the week

| Number of hours | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|
| frequency | 6 | 8 | 14 | 8 | 4 |

↳ Calculate the mean ?

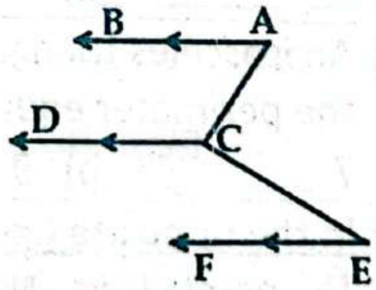
---

[3] Add: $3X - 2Y + Z , X + 2Y + 3Z$

↳ Then find the numerical value when $X + Z = 7$

---

[4] In the opposite figure:




$m(\angle A) + m(\angle E) = 90$

↳ Find: $m(\angle ACD) + m(\angle ECD)$

---

[5] In the opposite figure:
If C ( 1 , 4 ) is the midpoint of $\overline{AB}$ where A(− 1 , 2 )
↳ Find the coordinates of B ?

*End of the questions*

# Model Exam No (10)

**[Q1] Choose the correct answer:**

**(1)** If the length in drawing is 5 cm, and drawing scale is 1:20000, then the real length is ...................... KM

a) 1 b) 100 c) 1000 d) 100000

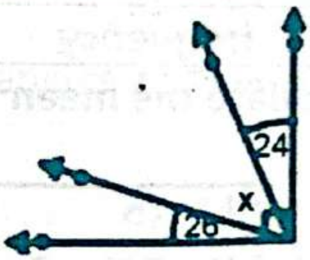
**(2)** If $|F| - 2 = 2$, then F = ..........

a) 0 b) 4 c) $\pm 4$ d) $-4$

**(3)** Which of the following is solution of equation $\frac{1}{3}X - 1 = 1$ in Q ?

a) 0 b) 2 c) 4 d) 6

**(4)** In the opposite figure:
The value of X is ..................




a) 20° b) 30° c) 40° d) 50°

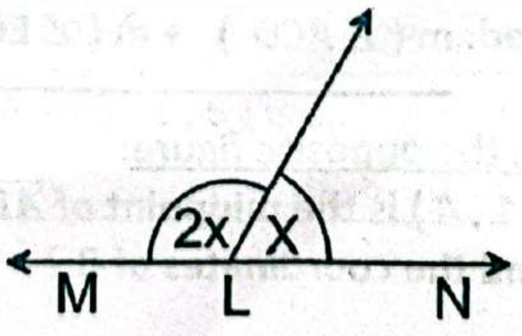
**(5)** If $\frac{5}{Y-1} = \frac{20}{24}$, then the value of Y = ..................

a) 6 b) 7 c) 8 d) 9

**(6)** An isosceles triangle whose length of two sides 5 cm , 2 cm, then the perimeter equals ..........

a) 7 b) 9 c) 10 d) 12

**(7)** **In the opposite figure:**
The points L, M , N
are on the same straight line
the value if X = ...............°




a) 30 b) 45 c) 60 d) 75

[Q2] Choose the correct answer:

**(1)** Which inequality expresses that Salma needs no more than hours to read a novel?

a) $X \leq 5$ b) $X \geq 5$ c) $X < 5$ d) $X > 5$

**(2)** If the difference between measure of two angles is $40^\circ$, and ratio between them 3 : 8, then measure of the smaller is .....°

a) 24 b) 40 c) 65 d) 88

**(3)** The mean of the values 9 , L − 3 , 6 − L is ...........

a) 3 b) 4 c) 6 d) 9

**(4)** If the figure ABCD is a parallelogram, m ( ∠ BAC ) = $50^\circ$, then m ( ∠ ACD ) = ............°

a) 40 b) 50 c) 65 d) 130

**(5)** Length of projection from point ( − 4 , − 7 ) on X-axis equals .........

a) − 4 b) 4 c) − 7 d) 7

**(6)** Square of side length 10 a cm, its perimeter is ............... Cm

a) 20 a b) 40 m c) $100\ a^2$ d) $1000\ a^3$

**(7)** Number of subsets from K = { 5 } is ............

a) 0 b) 1 c) 2 d) 3

[Q3] Answer the following questions:

**[1] Find the sum of : $5X - 2Y + 3Z$ , $2Z + 2Y - 5X$**

**↳ then find the numerical value at $Z = 4$**

---

[2] Shahd, Amira and Basant founded a pharmaceutical company with ratio 3 : 4 : 5, at the end of the year the profit is 60000 L.E. Find the share of each of them

---

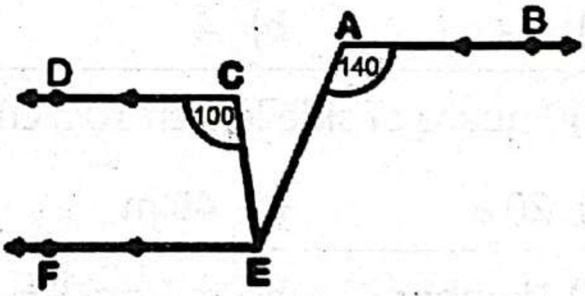
[3] In a survey of a group of women about their favorite TV shows

| *Show* | Health | Series | Movies | Kitchen |
|---|---|---|---|---|
| *Ratio* | 15 % | 35 % | 20 % | .......... |

↳ Represents this data with pie chart

---

**[4] In the opposite figure:**




$\overline{AB} \parallel \overline{CD} \parallel \overline{EF}$

**M ( ∠C) = 140°, m ( ∠A) = 100°**

**Find the m ( ∠ AEC )**

---

**[5] If point C ( X , 2 ) is midpoint of AB, A ( 3 , 2 ) , B ( 5 , Y ). Find the value of X , Y**

End of the questions

# MODEL EXAM NO (11)

## [Q1] Choose the correct answer:

**(1)** The ratio $\frac{2}{5}$ equivalent to ............

a) $\frac{12}{15}$ b) $\frac{5}{8}$ c) $\frac{14}{35}$ d) $\frac{9}{12}$

**(2)** If A = { 1 , 4 , 7 }, which of the following subset of A?

a) { 1 , 7 } b) { 4 } c) ∅ d) All of previous

**(3)** $0.\overline{81}$ = ..................

a) $\frac{81}{100}$ b) $\frac{81}{10}$ c) $\frac{9}{11}$ d) $\frac{7}{11}$

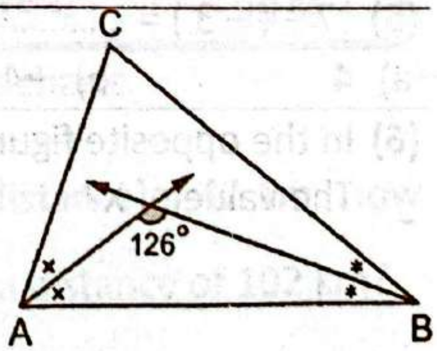
**(4)** Which of the graphical charts in which the real data is not shown.....

a) Dot plot c) Histogram

b) Stem and leaf plot d) Bar graph

**(5)** In the opposite figure:

M ( ∠C ) = ..............°




a) 54 b) 108 c) 72 d) 27

**(6)** Number of axes of symmetry of an isosceles triangle is .....

a) 4 b) 3 c) 2 d) 1

**(7)** The coordinate of the midpoint of $\overline{AB}$ where A ( 3 , – 4 ), B ( –5 , 10) is............

a) ( 4 , 7 ) b) ( – 2 , 6 ) c) ( – 1 , 3 ) d) ( 1 , – 3 )

**[Q2] Choose the correct answer:**

**(1)** If $\frac{k-1}{35} = \frac{2}{7}$, find the value of K?

a) 10 b) 9 c) 11 d) 12

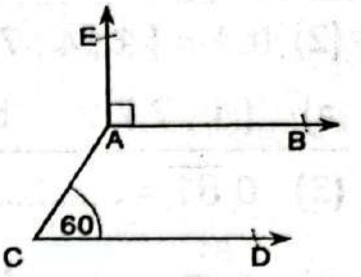
**(2)** The solution set of the equation 5 ( 2 X – 3 ) = 20 in N?

a) { 4 } b) $\{\frac{7}{2}\}$ c) { 7 } d) Ø

**(3)** In the opposite figure:

M ( ∠ C ) = 60°, $\overrightarrow{AE} \perp \overrightarrow{AB}$, $\overrightarrow{AB} \,//\, \overrightarrow{CD}$

Find the m ( ∠ CAE) ?




a) 60 b) 120 c) 150 d) 90

**(4)** If the drawing scale of a map is 1:300,000 and the distance between two points on the map is 4 cm. What is the real distance between the two points in kilometers?

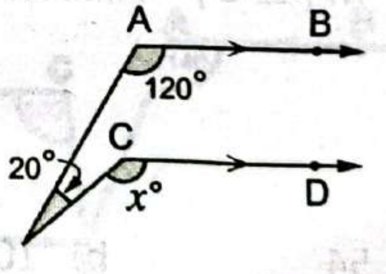
a) 4 b) 6 c) 8 d) 12

**(5)** 7 – ( – 3 ) = ..............

a) 4 b) –4 c) 10 d) –10

**(6)** In the opposite figure:

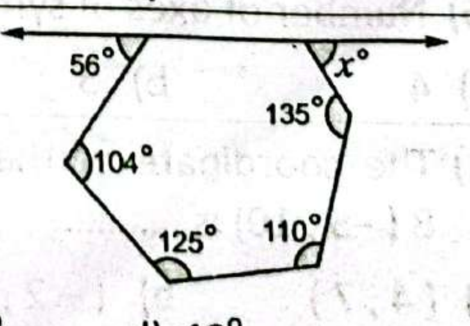
The value of X?




a) 40° b) 60° c) 120° d) 140°

**(7)** In the opposite figure:

The value of X?




a) 114° b) 76° c) 132° d) 48°

**[Q3] Answer the following questions:**

[1] Alaa, Sayed, and Sherif share an amount of 1200 pounds in a ratio of 2:3:5 respectively. How much is Sayed's share of this amount?

[2] Plot the following points in the coordinate plane:

D ( 1 , − 1 ) , C ( − 4 , − 1 ) , B ( − 2 , 3 ) , A ( 3 , 3 )

Find the area of rectangle ABCD

[3] In a survey of a group of people about their favorite hobby, the results of the survey were as follows:

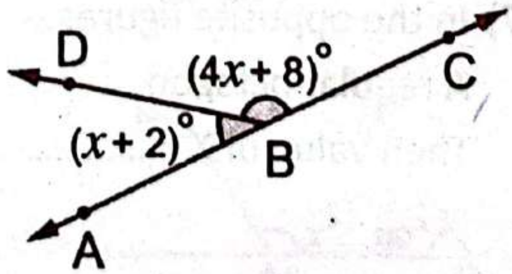
| Hobbies | Football | Drawing | Music | Reading |
|---|---|---|---|---|
| Ratio | 40 % | 25 % | 15 % | 20 % |

Plot the survey results in pie charts.

[4] A car uses 7 liters of gasoline to travel a distance of 42 km. How much gasoline does the car need to travel a distance of 102 km?

[5] If the points A , B , C are collinear

Find the value of X?




End of the questions

# MODEL EXAM NO (12)

**[Q1] Choose the correct answer:**

**(1)** Which of the following equals – 7

a) $-35 \div 5$ b) $1 \div (-7)$ c) $0 \div (-7)$ d) $-35 \div (-5)$

**(2)** If the price of a product is reduced from 1500 LE to 12700 LE, what is the discount rate?

a) 3 % b) 15 % c) 20 % d) 30 %

**(3)** If $X < 0$ ، $Y < 0$, the point $(-X, -Y)$ lies in .......... Quadrant

a) First b) Second c) Third d) Fourth

**(4)** Which of the following equations hasn't solution?

a) $7Y = 21$ b) $7Y = 27$ c) $7Y = 35$ d) $7Y = 42$

**(5)** Magdy can run 75 meters in 25 seconds. If he continuous with the same speed, which of the following equations can you use to find the time (x) he needs to cover **300** meters?

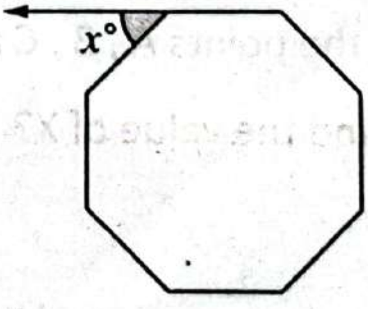
a) $\frac{75}{x} = \frac{300}{25}$ c) $\frac{75}{25} = \frac{300}{x}$

b) $\frac{25}{x} = \frac{300}{75}$ d) $\frac{75}{25} = \frac{x}{300}$

**(6)** The supplement of obtuse angle is ..............

a) Acute b) Obtuse c) Straight d) reflex

**(7)** In the opposite figure:
A regular octagon,
Then value of X = ...............°




a) 35 b) 45 c) 75 d) 135

**[Q2] Choose the correct answer:**

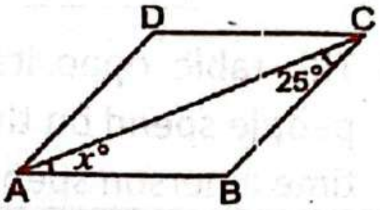
**(1)** If the sum of measure of two angles in triangle is $130^\circ$, then the measure of third angle = ..................°

a) 20  b) 30  c) 50  d) 60

**(2)** Which inequality expresses that Basem needs at least 10 GB per month to complete his work on the Internet?

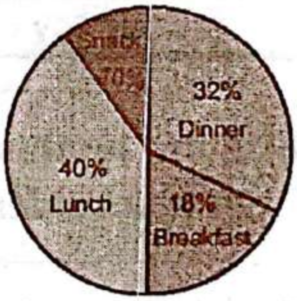
a) $X < 10$  b) $X > 10$  c) $X \le 10$  d) $X \ge 10$

**(3)** In the opposite figure:
ABCD is a rhombus
The value of X = ............°




a) 25  b) 50  c) 100  d) 130

**(4)** The opposite pie chart shows the percentage of calories Eman had in her meals on one day, if Eman had 2500 calories that day, how many calories did she have at dinner?




a) 1000  b) 450  c) 250  d) 800

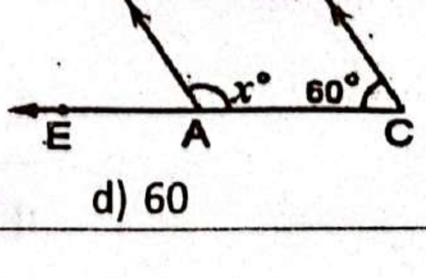
**(5)** The result of $X + 3Y - 4Z$, $-3Y - X - 4Z$ is ........

a) Zero  b) $-8Z$  c) $8Z$  d) $2X-6Y+8Z$

**(6)** If $\{4, 5, 7\} \subset \{3, X, 4, Y, 8\}$, find the value of X+Y ?

a) 5  b) 7  c) 8  d) 12

**(7)** In the opposite figure:
The value of X = .......°




a) 150  b) 120  c) 110  d) 60

**[Q3] Answer the following questions:**

[1] Three people participated in establishing a factory. The first paid 9,000,000 pounds, the second paid 6,000,000 pounds, and the third paid 7,500,000. The profits at the end of the first year were 2,250,000. The profits were distributed according to each of their contributions to the capital. Calculate each of their shares in the profits of the first year.

[2] The table opposite shows the number of minutes a group of people spend on the telephone. Calculate the arithmetic mean of time a person spends on the telephone.

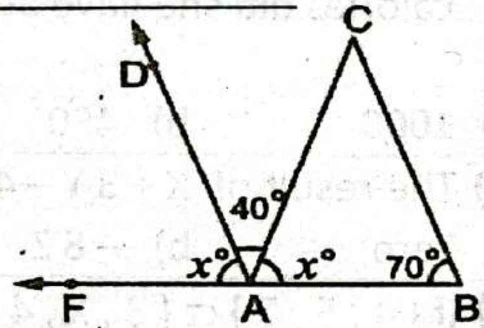
| Minutes | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| frequency | 12 | 20 | 36 | 20 | 12 |

[3] If my mother is now three times my age, and my mother is 24 years older than me, how old are we now?

[4] In the opposite figure:

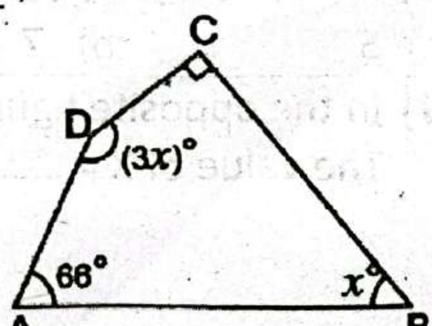
M $(\angle CAD) = 40^\circ$ , m $(\angle B) = 70^\circ$

Prove that: $\overrightarrow{AD} \parallel \overline{BC}$




[5] In the opposite figure:

Find the value of X?




*End of the questions*

AHMED NASSR

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

30

**1** If $a = |-5|$, $b = -7$, then $a \times b =$ ........... .

(a) 35 (b) −35 (c) −7 (d) 5

**2** The number of subsets of the set {0 , 2 , 9} is .............. .

(a) 3 (b) 6 (c) 8 (d) 9

**3** The result of subtacting 7a from 15a is ................ .

(a) −8a (b) 8a (c) $8a^2$ (d) −22 a

**4** Obtuse angle supplements ........... angle.

(a) acute (b) straight (c) obtuse (d) right

**5** $2x = 2$, then $3x - 1 =$ ............ .

(a) 2 (b) 3 (c) 4 (d) 5

**6** $\emptyset$ ........... {0 , 100}

(a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$

**7** If $\frac{x}{7} = \frac{10}{35}$ , then $x - 3 =$ ............... .

(a) −1 (b) 1 (c) 2 (d) −2

**8** If $L_1$ and $L_2$ are to coplanar straight lines, $L_1 \perp L_3$ and $L_2 \perp L_3$ then ...........

(a) $L_1 // L_2$ (b) $L_1 \perp L_2$ (c) $L_1$ intersects $L_2$ (d) $L_1$ is coincides $L_2$

**9** If the origin point is the midpoint of AB and A located in the 2nd quadrant, in which quadrant is point B located?

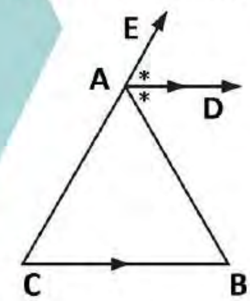
(a) 1st quadrant (b) 3rd quadrant
(c) 2nd quadrant (d) 4th quadrant

## Q2: ANSWER THE FOLLOWING ( 21 marks )

**1** A building of height 80m was pictured by a scale 1 : 2,000
Find the height of this building in the picture.

..........................................................................................
..........................................................................................
..........................................................................................

**2** $\overrightarrow{AD}$ // $\overline{CB}$, $\overline{AD}$ bisects $\angle BAE$
, $m(\angle B) = 52°$,
Find $m(\angle BAD)$ , $m(\angle C)$




..........................................................................................
..........................................................................................
..........................................................................................

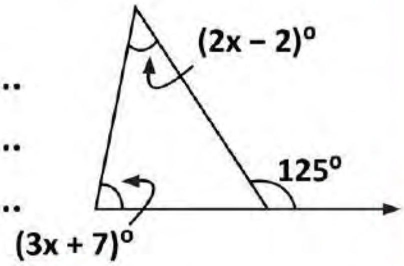
**3** Murad deposit 75,000 L.E in Al-Ahly bank, with annual interest 23%
Find the total amount which he gets at the end of one year.

..........................................................................................
..........................................................................................
..........................................................................................

**4** Find the S.S of $a + 5a - 2 = 2(3 - a)$ in Q

..........................................................................................
..........................................................................................
..........................................................................................

**5** Find value of x:

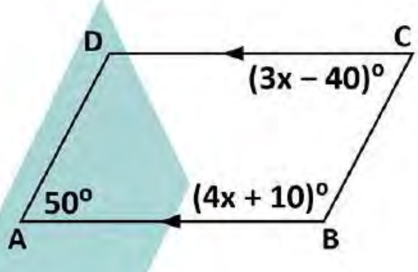



..............................................................................................

..............................................................................................

..............................................................................................

**6** In the opposite figure:
Prove that ABCD is a parallelogram.




..............................................................................................

..............................................................................................

..............................................................................................

**7** The following data represents the number of shirts sold by clothes shop over 30 days.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 13 | 32 | 12 | 33 | 27 | 37 | 44 | 8 | 26 | 32 |
| 36 | 41 | 45 | 9 | 38 | 16 | 46 | 48 | 29 | 15 |
| 13 | 32 | 14 | 18 | 28 | 34 | 25 | 7 | 18 | 33 |

Represent these data using a stem-and-leaf plot,
The find the median and the mode.

..............................................................................................

..............................................................................................

..............................................................................................

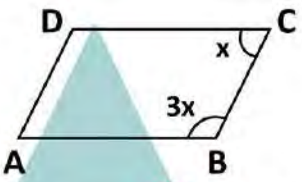
30

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

**1** If 2ab = 10, then 3ab = .............. .

ⓐ 5 ⓑ 6 ⓒ 15 ⓓ 30

**2** In the opposite figure:
ABCD is a parallelogram, then m(∠A) ............. .




ⓐ 30° ⓑ 45° ⓒ 60° ⓓ 135°

**3** In the parallelogram, each two consecutive angles are .................

ⓐ complementary ⓑ equal in measure ⓒ supplementary ⓓ reflex

**4** If C(-3 , y) is the midpoint of AB where A(x , -6) and B(1 , -8), then x + y = ........ .

ⓐ -11 ⓑ 11 ⓒ -18 ⓓ -14

**5** {1 , 2 , 3 , 5 , 7 , 13} .......... the set of prime number

ⓐ $\in$ ⓑ $\notin$ ⓒ $\subset$ ⓓ $\not\subset$

**6** Triangle consists of two ................ angles at least

ⓐ acute ⓑ obtuse ⓒ right ⓓ reflex

**7** $-3\frac{1}{4}$ × ........... = 1

ⓐ $\frac{13}{4}$ ⓑ $\frac{4}{13}$ ⓒ $\frac{-4}{13}$ ⓓ $\frac{-13}{4}$

**8** 4x increases ( − 4x) by .............. .

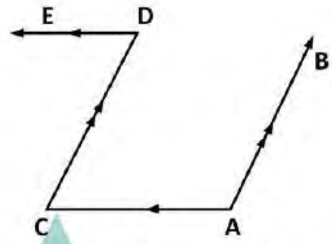
ⓐ zero ⓑ 8x ⓒ −8x ⓓ 16x

**9** If the length in drawing is 3 cm, and the length in real is 18 m,
Then the drawing scale is ............... .

ⓐ 1 : 6,000 ⓑ 1 : 600
ⓒ 1 : 60 ⓓ 1 : 6

FOLLOW US

## Q2: ANSWER THE FOLLOWING ( 21 marks )



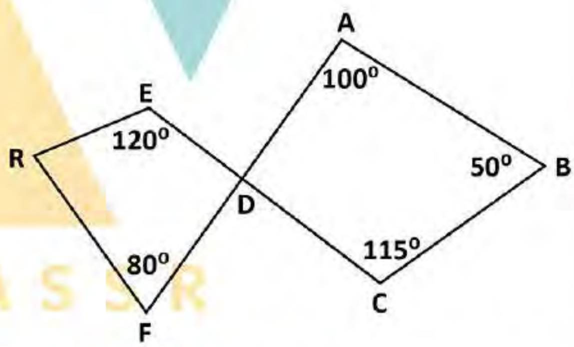

**1** $\overrightarrow{DE}$ // $\overline{AC}$, $\overrightarrow{AB}$ // $\overline{DC}$, m(∠A) = 110°
Find m(∠C), m(∠D)

.................................................................................................
.................................................................................................
.................................................................................................

**2** If X = { 7 , 5 , 4 , 1} , Y = { 9 , 4 , 5 , 2 } , Z = { 2 , 10 }, Find:

(a) X ∩ Y = .......................... .  (b) Y ∪ Z = .......................... .

(c) { 4 , 5 , 6 } ............ Y




**3** AF ∩ CE = {D}, m(∠A) = 100°
m(∠C) = 115°, m(∠B) = 50°
m(∠F) = 80°, m(∠E) = 120°
Find m(∠R)

.................................................................................................
.................................................................................................
.................................................................................................

**4** A picture of a building is taken with a drawing scale 1 : 100, if the height of the building in the picture is 3 cm,
What is its real height?

.................................................................................
.................................................................................
.................................................................................

FOLLOW US

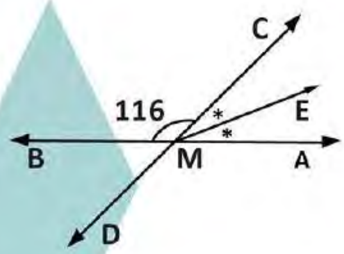
**5** $0.\overline{6} - (-\frac{1}{6}) = 25\% + y$, Find the value of y

.......................................................................................................................................

.......................................................................................................................................

.......................................................................................................................................

**6** $\overleftrightarrow{AB} \cap \overleftrightarrow{CD} = \{M\}$, m( $\angle$ CMB) = 116°
, $\overrightarrow{ME}$ bisects $\angle$AMC
Find: m( $\angle$AMD), m( $\angle$AMC), m( $\angle$AME)




.......................................................................................................................................

.......................................................................................................................................

.......................................................................................................................................

**7** In the opposite stem and leaf plot:
Write all the data
Find the mode, median, Q1, and Q3

| Stems | Leaves |
|---|---|
| 4 | 1 1 2 |
| 5 | 2 3 |
| 6 | 2 2 2 |
| 7 | 1 3 5 |
| Key | 4\|1 meas 41 |



.......................................................................................................................................

.......................................................................................................................................

.......................................................................................................................................

30

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

**1** In the parallelogram, each two opposite angles are ..................

ⓐ complementary ⓑ equal in measure ⓒ supplementary ⓓ reflex

**2** The sum of $x + 2y - 3z$ and $-2y - x - 3z$ is ............. .

ⓐ $-6z$ ⓑ zero ⓒ $6z$ ⓓ $2x - 4y + 6z$

**3** The projection of the point (-3 , 5) on x-axis is ............. .

ⓐ (5 , -3) ⓑ (0 , 5) ⓒ (-3 , 0) ⓓ (3 , -5)

**4** Drawing > 1, then it expresses ............................ .

ⓐ reduction ⓑ minimization ⓒ enlargement ⓓ otherwise

**5** In parallelogram XYZL, if $m(\angle X) = \angle m(\angle Y)$, Then $m(\angle Y)$ = .............. °.

ⓐ 120 ⓑ 45 ⓒ 90 ⓓ 180

**6** If $a + b = 0$, where $a \neq b$, then $a \times b$ ............ zero.

ⓐ > ⓑ < ⓒ = ⓓ ≥

**7** Three times a number is 27, then $\frac{1}{3}$ this number = ............. .

ⓐ 9 ⓑ 12 ⓒ 27 ⓓ 3

**8** If $X \subset Y$, Then $X \cap Y$ = ............. .

ⓐ X ⓑ Y ⓒ $X \cup Y$ ⓓ otherwise

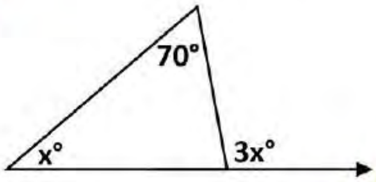
**9** If two straight lines intersect, then each two vertically angles are .....

ⓐ supplementary ⓑ adjacent
ⓒ equal in measure ⓓ complementary

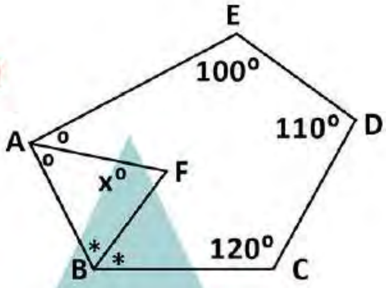
## Q2: ANSWER THE FOLLOWING ( 21 marks )

**1** Find the value of x of the following:

(a)




(b)




..........................................................................................

..........................................................................................

..........................................................................................

**2** Find the S.S of the following equations in N:

(a) $6x - 2x + 7 = 4$

..................................

..................................

..................................

(b) $4(x - 1) = 3(x + 1)$

..................................

..................................

..................................

**3** ABC is a triangle in which the ratio between its angles is 5 : 7 : 8,
Find the measure of each angle.

..........................................................................................

..........................................................................................

..........................................................................................

**4** Three consecutive odd numbers whose sum is 213, what are there numbers?

..........................................................................................

..........................................................................................

..........................................................................................

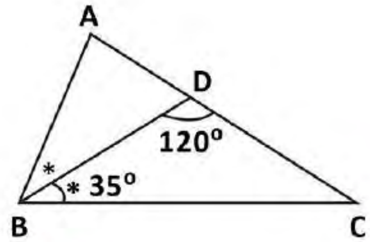
FOLLOW US

**5** In the opposite figure:

BD bisects $\angle ABC$, $m(\angle DBC) = 35^o$

$m(\angle BDC) = 120^o$

Find: $m(\angle A)$




..........................................................................................

..........................................................................................

..........................................................................................

**6** If the scale on the map is 1 : 600,000 and the distance between two points on the map is 4.5 cm, Find the real distance between the two points

..........................................................................................

..........................................................................................

..........................................................................................

**7** Write the expression: $7m - 3n - 5m + 4n$ in its simplest form

..........................................................................................

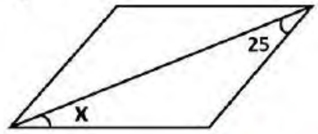
..........................................................................................

..........................................................................................

30

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

**1** In opposite figure:
ABCD is a rhombus what is the value of x?




ⓐ 25° ⓑ 50° ⓒ 100° ⓓ 130°

**2** −3 exceeds 5 by amout of ............. .

ⓐ −8 ⓑ −2 ⓒ 2 ⓓ 8

**3** The centre of the first set of the sets : 7-, 13-, 19-, 25- is ..............

ⓐ 6 ⓑ 7 ⓒ 10 ⓓ 13

**4** The zero angle complements ............ angle.

ⓐ zero ⓑ acute ⓒ obtuse ⓓ right

**5** The solution set of the equation 4x = −12 in N is ............... .

ⓐ {−3} ⓑ {3} ⓒ Ø ⓓ {0}

**6** The sum of measures of the interior angles of any quadrilateral equals .......... .

ⓐ 270° ⓑ 360° ⓒ 180° ⓓ 90°

**7** If (3, m − 2) lies on the X-axis, what is the value of m?

ⓐ −3 ⓑ −2 ⓒ 2 ⓓ 3

**8** If two ratio equal, then the product of extremes ............ the product of means

ⓐ less than ⓑ equals ⓒ greater than ⓓ otherwise

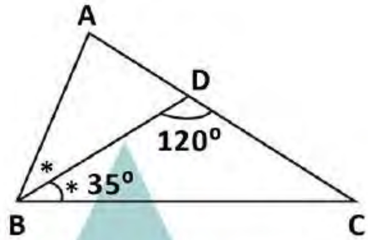
**9** Which of the following equations is equivalent to
the equation x + 3 = 12

ⓐ x − 3= −12 ⓑ x + (−3) = 12

ⓒ x − (−3) = 12 ⓓ x − (−3) = −12

## Q2: ANSWER THE FOLLOWING ( 21 marks )

**1** In the opposite figure:
BD bisects ∠ABC, m(∠DBC) = 35°
m(∠BDC) = 120°
Find: m(∠A)




...................................................................................................
...................................................................................................
...................................................................................................

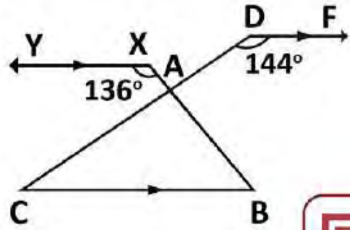
**2** A man passed away, leaving 150,000 L.E for his wife, two sons and one daughter, If his wife´s share is $\frac{1}{8}$ of the total amount, and the remaining sum is to be distributed among his children, What is the share of each son and the daughter, If the share of the son is twice the share of the daughter.

...................................................................................................
...................................................................................................
...................................................................................................

**3** In the opposite table, the measure of circular sector of Handball sector is ............ °.

| Sports | Football | Handball | Tennis |
|---|---|---|---|
| frequency | 140 | 360 | 100 |

**4** In the opposite figure :
BC // DF // XY
tm(∠D) = 144° , m(∠X) = 136°
Find with proof: m( ∠BAC)




...................................................................................................
...................................................................................................
...................................................................................................



FOLLOW US

**5** Alaa purchased a mobile phone for 16,600 L.E and sold it for 17,762 L.E Calculate the percent of Alaa´s profit.

..........................................................................................................

..........................................................................................................

..........................................................................................................

**6** If X = { 5 , 1 , 7 , 9} , Y = { 9 , 3 , 7 , 2 } , Z = { 7 , 5 }, Find:

(a) X ∩ Y = .......................... .

(b) Y ∪ Z = .......................... .

**7** Find the S.S of the following equations in Q:

(a) 4 (x + 1) = 2 (x − 1)

..........................................

..........................................

..........................................

(b) 3x + 6 = 30 − 5x

..........................................

..........................................

..........................................

## PREP 1 - MODEL ( 5 )

30

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

1. The additive inverse of $(-3)^{zero}$ is .............. .

   (a) −1 (b) 1 (c) 3 (d) −3

2. The decrease of −3ab than 2ab is ................ .

   (a) −ab (b) ab (c) −5ab (d) 5ab

3. −m + m = 0 is called .................... property

   (a) identity (b) inverse (c) distributive (d) closure

4. For a set of values: if $\overline{X} = 50$ and $\sum (f.\, x) = 2{,}500$, what is the value of $\sum f$?

   (a) 125,000 (b) 2,550 (c) 50 (d) 2,450

5. If the ratio of two complementary angles is 7 : 11, then the measure of the smaller angle is .................

   (a) 145° (b) 70° (c) 90° (d) 35°

6. If x < 0 and y > 0, in which quadrant is the point (x , -y) located?

   (a) 1st quadrant (b) 2nd quadrant (c) 3rd quadrant (d) 4th quadrant

7. If angle measure Y complements an angle of measure ...........

   (a) 180° − Y (b) 90° − Y (c) 180° + Y (d) 90° + Y

8. The sum of lengths of any two sides of a triangle ........... the length of the third side

   (a) > (b) = (c) < (d) ≥

9. If the original price of a mobile is 17,700 LE, then its sale price after apply a discount 12% is .....................

   (a) 2,124 (b) 19,824
   (c) 15,576 (d) 15,756

AHMED NASSR

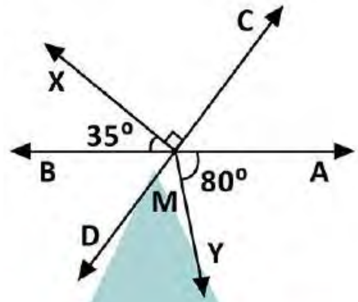
## Q2: ANSWER THE FOLLOWING ( 21 marks )

**1** In the opposite figure:

$AB \cap CD = \{M\}$, $m(\angle CMX) = 90^\circ$

$m(\angle XMB) = 35^\circ$, $m(\angle AMY) = 80^\circ$

Find: $m(\angle AMD)$ , $m(\angle BMY)$



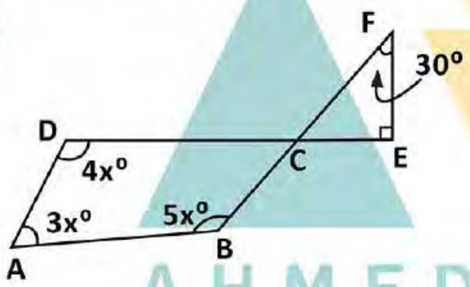

..................................................................................................

..................................................................................................

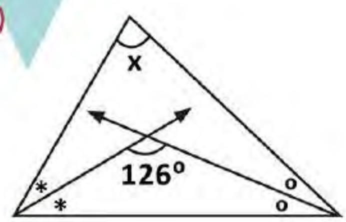
..................................................................................................

**2** Find the value of x:

ⓐ




ⓑ




..................................................................................................

..................................................................................................

..................................................................................................



**3** Find the S.S of the following equations in N:

ⓐ $-2(x + 1) = 3$

..............................................

..............................................

..............................................

ⓑ $3(x - 2) = 5x - 10$

..............................................

..............................................

..............................................

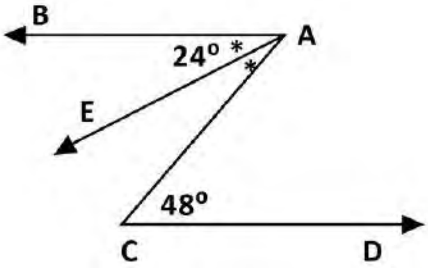
FOLLOW US

**4** In the opposite figure:

AE bisects $\angle BAC$, $m(\angle BAE) = 24^{\circ}$

m, $(\angle ACD) = 48^{\circ}$

Prove that: AB // CD




........................................................................................................

........................................................................................................

........................................................................................................

**5** Murad deposit 75,000 L.E in Al-Ahly bank, with annual interest 23%

Find the total amount which he gets at the end of one year.

........................................................................................................

........................................................................................................

........................................................................................................

**6** If ABCD is a paralleogram where A(-1 , 1), B(4 , 2), and D(1 , 4)

Determine the coordinates of the following:

(a) The point of intersection of its diagonal (b) The vertex C



........................................................................................................

........................................................................................................

........................................................................................................

**7** The following data represents the number of shirts sold by clothes shop over 30 days.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 11 | 35 | 14 | 31 | 27 | 32 | 45 | 7 | 22 | 22 |
| 36 | 22 | 45 | 9 | 38 | 16 | 46 | 42 | 29 | 15 |
| 15 | 32 | 14 | 48 | 38 | 34 | 22 | 7 | 18 | 33 |

Represent these data using a stem-and-leaf plot,

The find the median and the mode.

# FINAL REVISION 2025 - FIRST TERM

## PREP 1 - MODEL ( 6 )

30

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

**1** In the quadrilateral ABCD, If $m(\angle A) = 3\ m(\angle B) = m(\angle C) = 120°$ , then $m(\angle D) =$ ..........

ⓐ 60° ⓑ 40° ⓒ 80° ⓓ 160°

**2** The additive identity is ........... .

ⓐ 0 ⓑ 1 ⓒ −1 ⓓ 2

**3** If $x + 3 = 5$, $x \in Z^-$ , Then the solution set is .............. .

ⓐ {−3} ⓑ {5} ⓒ {−5} ⓓ Ø

**4** If 0.8 , x , 4 and 5 are in a proportion, then x = ............. .

ⓐ 0.1 ⓑ 2 ⓒ 1 ⓓ 0.2

**5** If $\frac{|a|}{7} = 6$, then a = ............ .

ⓐ 24 ⓑ −42 ⓒ 42 ⓓ ±42

**6** If $m(\angle A) = 46°$. then m ( reflex $\angle A$) = ..............°

ⓐ 44 ⓑ 134 ⓒ 314 ⓓ 360

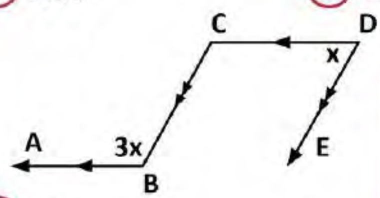
**7** In the triangle ABC, $\frac{AB + BC}{AC}$ ............ 1

ⓐ > ⓑ = ⓒ = ⓓ ≥

**8** If the arthimetic mean of the values 5, 4, 8, a, a + 4 is 21, then a = ............ .

ⓐ 29 ⓑ 42 ⓒ 105 ⓓ 21

**9** In the opposite figure:
CD // BA , DE // CB, then: x = ..........




ⓐ 60° ⓑ 45°
ⓒ 120° ⓓ 90°

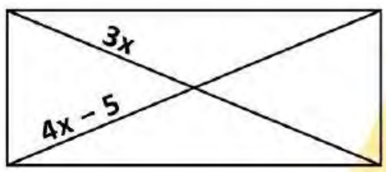


FOLLOW US

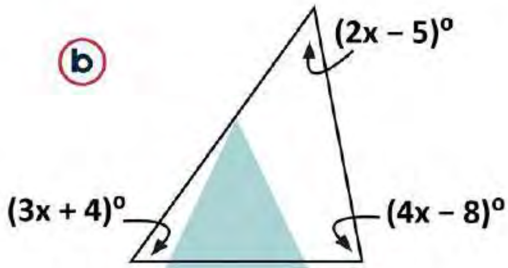
## Q2: ANSWER THE FOLLOWING ( 21 marks )

**1** Find the value of x:

ⓐ




ⓑ




..................................................................................................

..................................................................................................

..................................................................................................

**2** A shopkeeper bought some goods for 45,000 L.E. He spent 5,000 L.E to transport them. He sold these goods for 62,500 L.E,
Find percentage of profit

..................................................................................................

..................................................................................................

..................................................................................................

**3** Write the following expressions in the simplest form:

ⓐ $-5x - 7y - 7x - 2y + 7y - 3x$ ⓑ $2(3x - 4) - 3(x - 2)$

..................................................................................................

..................................................................................................

..................................................................................................

**4** By using multiplicative properties, Find the value of each of the following:

$$\frac{3}{4} \times 35 + 35 \times \frac{1}{2} - 35 \times \frac{1}{4}$$

..................................................................................................

..................................................................................................

..................................................................................................

FOLLOW US

**5** A butterfly is of length 3.75 mm, Find the drawing scale if its photo length is 0.027 m

........................................................................................................
........................................................................................................
........................................................................................................

**6** In the triangle ABC, where the length of AB is 5 cm and the length of BC is 7 cm. What the smallest possible integer value for the length AC?

........................................................................................................
........................................................................................................
........................................................................................................

**7** In the opposite stem and leaf plot:
Write all the data
Find the mode, median, Q1, and Q3

| Stems | Leaves |
|---|---|
| 2 | 1 1 2 |
| 3 | 2 3 |
| 4 | 2 2 2 |
| 5 | 1 3 5 |

Key | 2|3 meas 3.2



........................................................................................................
........................................................................................................
........................................................................................................

AHMED NASSR

30

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

**1** The arithmetic mean of the values 3, 4, 8, a, a + 2 is 15, then a = .............

(a) 29 (b) 58 (c) 75 (d) 17

**2** If the two vertically angles are complementary angles, the the measure of each angle is ...............

(a) $45^\circ$ (b) $50^\circ$ (c) $180^\circ$ (d) $90^\circ$

**3** The additive inverse of x − 5 is .........

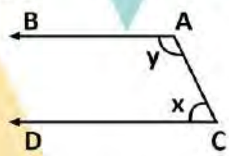
(a) x − 5 (b) −x − 5 (c) −x + 5 (d) 5

**4** If the ratio 7 : 13 is the same ratio x : 52, then x = ............... .

(a) 14 (b) 21 (c) 28 (d) 35

**5** In the opposite figure:

$\overrightarrow{AB} // \overrightarrow{CD}$, $\frac{x}{y} = \frac{7}{11}$ , what is the of x?




(a) $60^\circ$ (b) $70^\circ$ (c) $100^\circ$ (d) $110^\circ$

**6** If A = { 5 , 7 , 2}, Then 57 ............ A

(a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$



**7** If ∠X complements ∠Y, m(∠X) = 2m(∠Y), then m(∠Y)= .............

(a) $45^\circ$ (b) $30^\circ$ (c) $60^\circ$ (d) $90^\circ$

**8** 8 + (−10) > ............... .

(a) 2 (b) −2 (c) 0 (d) −4

**9** From the following stem-and-leaf plot, the mode = ......... .

| Stems | Leaves |
|---|---|
| 2 | 1 1 3 5 6 |
| 3 | 3 4 4 5 6 |
| 4 | 7 8 8 8 9 |
| 5 | 0 1 3 5 7 |

(a) 4 (b) 48

(c) 8 (d) 34

FOLLOW US

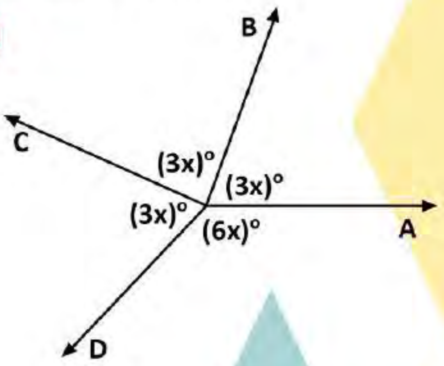
## Q2: ANSWER THE FOLLOWING ( 21 marks )

**1** If X = { 1 , 3 , 7 , 5} , Y = { 9 , 4 , 6 , 2 } Find:

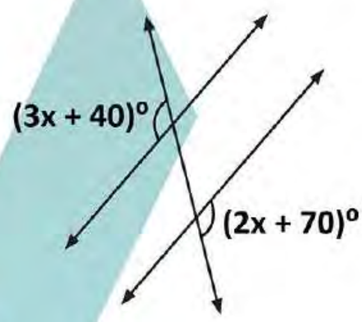
ⓐ X ∩ Y = .......................... .    ⓑ Y ∪ X = .......................... .

**2** Find value of x:

ⓐ




ⓑ




.......................................................................................................

.......................................................................................................

.......................................................................................................

**3** Divide 3,600 L.E among three persons such as that ratio between the share of first person to second person is 4 : 3 and the share of the third is half the share of first.
Find the share of each person.

.......................................................................................................

.......................................................................................................

.......................................................................................................

**4** $2a^2 - 3ab - 5b^2$ decreases $4a^2 + 3b^2 + ab$ by .............

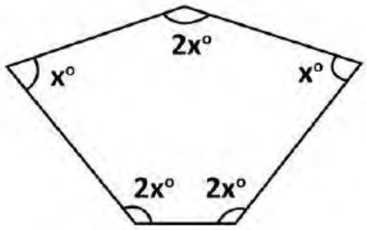
.......................................................................................................

.......................................................................................................

.......................................................................................................

FOLLOW US

**5** In the opposite figure :
Find with giving reason
The value of X

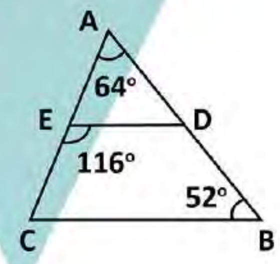



.............................................................................................................................

.............................................................................................................................

.............................................................................................................................

**6** In the opposite figure:
In the ABC, m(∠A) = 64°, m(∠B) = 52°
, m(∠DEC) = 116°
, E ∈ AC, D ∈ AB
Prove that: ED // CB




.............................................................................................................................

.............................................................................................................................

.............................................................................................................................

**7** The following data represents the number of shirts sold by clothes shop over 30 days.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 13 | 32 | 12 | 33 | 27 | 37 | 44 | 8 | 26 | 32 |
| 36 | 41 | 45 | 9 | 38 | 16 | 46 | 48 | 29 | 15 |
| 13 | 32 | 14 | 18 | 28 | 34 | 25 | 7 | 18 | 33 |

Represent these data using a stem-and-leaf plot,
The find the median and the mode.

.............................................................................................

.............................................................................................

.............................................................................................

AHMED NASSR

30

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

**1** The length of the projection of a line segment on a straight line ........... the length of the main line segment.

(a) > (b) = (c) < (d) ≤

**2** The numbers 5, 4, ..... can be lengths of sides of a triangle.

(a) 8 (b) 9 (c) 10 (d) 12

**3** "The sum of three consecutive odd numbers is 87" as equation is ............... .

(a) $3x = 87$ (b) $3x + 3 = 87$ (c) $3x + 4 = 87$ (d) $3x + 6 = 87$

**4** If ∠A complements ∠B and $m(\angle A) = \frac{2}{3} m(\angle B)$, then $m(\angle B) = .......^\circ$

(a) 18 (b) 36 (c) 54 (d) 90

**5** If $x < 0$ and $y > 0$, in which quadrant is the point $(x , -y)$ located?

(a) 1st quadrant (b) 2nd quadrant (c) 3rd quadrant (d) 4th quadrant

**6** $2x^2 + 4x^2 = ..........$ .

(a) $6x^4$ (b) $6x^2$ (c) $8x^2$ (d) $8y^4$



**7** Which of the following drawing scales represent enlargement?

(a) 1 : 20 (b) 5 : 23 (c) 7 : 3 (d) 4 : 35

**8** If $\frac{x+4}{6} = \frac{7}{14}$ , The x = .............. .

(a) −7 (b) 7 (c) −1 (d) 1

**9** If two adjacent sides of a parrallelogram are equal in length, then becomes ................ .

(a) a square (b) a rhombus
(c) a rectangle (d) a trapezium

FOLLOW US

## Q2: ANSWER THE FOLLOWING ( 21 marks )

**1** A TV price after deduction rate of 16% is 12,600 L.E, What is the TV price before the deduction?

........................................................................................................

........................................................................................................

........................................................................................................

**2** In triangle XYZ, where the length of XY is 8 cm, and the length of YZ is 5 cm What is the smallest integer that can represent the length of the third side?

........................................................................................................

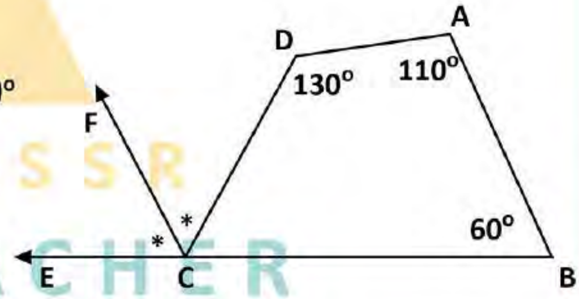
........................................................................................................

........................................................................................................

**3** In the opposite figure:

m(∠A) = 110°, m(∠D) = 130°, m(∠D) = 60°

, E ∈ BC, CF bisects ∠DCE






........................................................................................................

........................................................................................................

........................................................................................................

**4** Find the S.S in Q of the following equation:

$$\frac{5}{4 + 4x} = \frac{3}{1 - 2x}$$

........................................................................................................

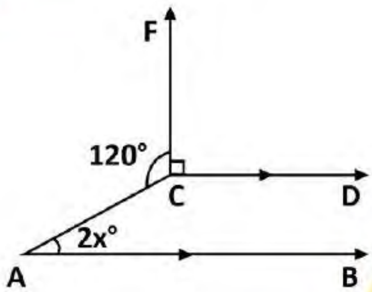
........................................................................................................

........................................................................................................

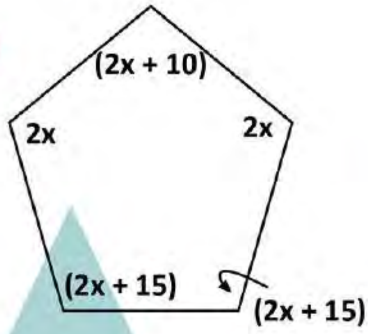
FOLLOW US

**5** Find the value of x:

ⓐ




ⓑ

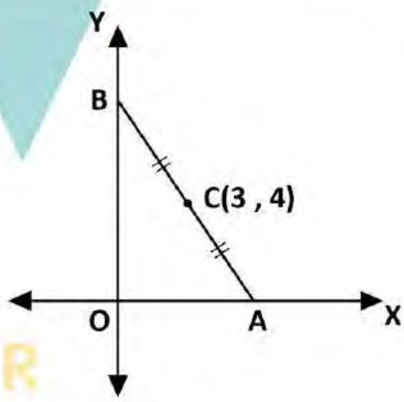



.......................................................................................................

.......................................................................................................

.......................................................................................................

**6** In the opposite figure:
Point C is the midpoint of AB
Find the coordinates of each of A and B




.......................................................................................................

.......................................................................................................

.......................................................................................................

**7** In a survey for Prep 1 students about their favorite color,
Represent the following table by Pie chart.

| Colors | Red | Blue | Green | Yellow |
|---|---|---|---|---|
| Percentage | 25% | 30% | 10% | 35% |

.......................................................................................................

.......................................................................................................

.......................................................................................................

FOLLOW US

30

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

**1** $7x + 5y + z$ increases $2x - y + z$ by .............

(a) $5x + 4y + 2z$ (b) $5x + 6y$ (c) $9x + 4y$ (d) $9x - 6y - 2z$

**2** If the mean of the following set of data $x + 1$ , 8, $2x + 4$, $x - 5$, $x + 2$ is 7
Then the value of x = ............. .

(a) 8 (b) 5 (c) 3 (d) 2

**3** ABCD is a parallelogram in which: $m(\angle A) + m(\angle C) = 140^0$, then $m(\angle B)$ = ....... .

(a) $40^o$ (b) $70^o$ (c) $110^o$ (d) $220^o$

**4** The first proportional of 12 , 3 and 4 is ............. .

(a) 15 (b) 9 (c) 7 (d) 3

**5** The multiplicative identity is .................. .

(a) 0 (b) 1 (c) −1 (d) 2

**6** The two straight line perpendicular to a third straight line is the same plane are ..................

(a) perpendicular (b) intersecting (c) parallel (d) coincident

**7** k + k + k = ............... .

(a) $k^3$ (b) 3k (c) $3k^3$ (d) k + 3

**8** The result of subtracted $\frac{-5}{7}$ from $\frac{3}{14}$ equals ............ .

(a) $\frac{3}{14}$ (b) $\frac{13}{14}$ (c) $\frac{-1}{2}$ (d) $\frac{1}{2}$

**9** A sum of money 420 L.E was distributed between Murad and Farida in the ratio 2 : 5, then the share of Farida is ............ L.E

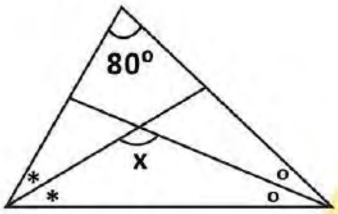
(a) 120 (b) 300
(c) 280 (d) 720

FOLLOW US

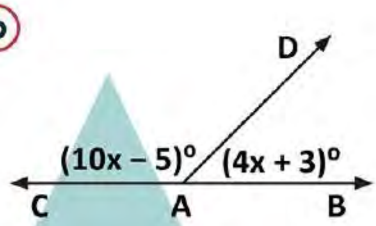
## Q2: ANSWER THE FOLLOWING ( 21 marks )

**1** **Find the value of x:**

ⓐ




ⓑ




..........................................................................................

..........................................................................................

..........................................................................................

**2** **If the point ( a – 2 , 3a + 9) lies on x-axis, determine the quarter in which the point ( a , 6 – a ) is located**

..........................................................................................

..........................................................................................

..........................................................................................

**3** **The difference between two natural numbers is 5 and their sum is 21 What are the two numbers ?**

..........................................................................................

..........................................................................................

..........................................................................................

**4** **When does a quadrilateral become a parallelogram? List 3 cases**

..........................................................................................

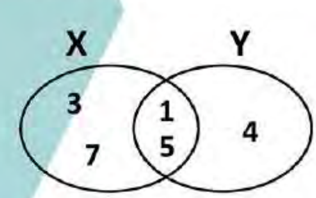
..........................................................................................

..........................................................................................

**5** A father distributed 225 L.E among his three sons. The share of the first was third of the sum and the ratio between the share of second and the share of third is 2 : 3,
Find the share of each of them.

..........................................................................................................
..........................................................................................................
..........................................................................................................

**6** In the opposite figure:




X = ......................      Y = ....................

X ∩ Y = ................ .

X ∪ Y = ................ .

**7** The opposite table represents hours of work of 100 workers.

| No. of hours (x) | 4 | 6 | 7 | 8 | 9 | 10 | 13 |
|---|---|---|---|---|---|---|---|
| No. of workers ($f$) | 15 | 13 | 30 | m | 10 | 8 | 2 |



Find the value of m, then find mean of the hours of work

..........................................................................................................
..........................................................................................................
..........................................................................................................

30

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

**1** The lengths of two side of an isosceles triangle are 3 cm and 7 cm, Then the third side could be ............... cm

(a) 3 (b) 4 (c) 5 (d) 7

**2** If $5x + 8x + 2x + 4x = 114$, then $5x + 3 =$ ............ .

(a) 33 (b) 35 (c) 47 (d) 8x

**3** If $x \div y = 1$, then $x =$ ............ .

(a) 1 (b) x (c) y (d) 0

**4** If $a : b : c = 4 : 5 : 3$, and $b - c = 9$, Then the value of $a =$ ........... .

(a) 9 (b) 18 (c) 15 (d) 21

**5** If $\frac{x}{y} = \frac{5}{7}$ , then $\frac{7x}{5y} =$ ........... .

(a) $\frac{5}{7}$ (b) 1 (c) $\frac{7}{5}$ (d) $\frac{1}{5}$

**6** For a set of values: if $\overline{X} = 20$ and $\sum (f \cdot x) = 2{,}500$, what is the value of $\sum f$?

(a) 50,000 (b) 5,000 (c) 1,250 (d) 125

**7** If the real length of an insect is 0.7 mm. and its length after magnification is 6.3 cm then the ratio of magnification is ............. .

(a) 9 : 1 (b) 90 : 1 (c) 900 : 1 (d) 9,000 : 1

**8** If a straight line cuts two parallel straight lines, then each two interior angles are ....

(a) complementary (b) perpendicular (c) supplementary (d) equal in measure

**9** The sum of supplementary angles equals the sum of the measures of ............... angles.

(a) 2 right (b) 4 right

(c) 3 right (d) 5 right

## Q2: ANSWER THE FOLLOWING ( 21 marks )

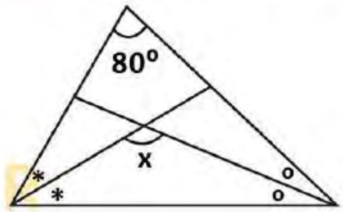
**1** Murad earns a monthly salary of 7,000 L.E, and the employees´ salaries were increased by the rate 15%. What is Murad´s salary after the increase and what the amount of the increase?

..........................................................................................
..........................................................................................
..........................................................................................

**2** What is the increase of the expression: $4k - 3n + 2m$ than $5k + m - 2n$

..........................................................................................
..........................................................................................
..........................................................................................

**3** In the opposite figure:
Find the value of x

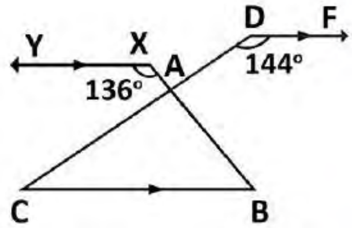



..........................................................................................
..........................................................................................
..........................................................................................

**4** Three consecutive numbers whose sum is 213, what are there numbers?

..........................................................................................
..........................................................................................
..........................................................................................

**5** In the opposite figure :
BC // DF // XY
,m(∠D) = 144° , m(∠X) = 136°
Find with proof: m( ∠BAC)




................................................................................................
................................................................................................
................................................................................................

**6** ABCD is a quadrilateral where, A(−3 , −2) , B(2 , −2) , C(4 , 2) and D(−2 , 2)
Is it a parallelogram or not?

................................................................................................
................................................................................................
................................................................................................

**7** If the colours preferred by 55 students in fourth grade are given in the opposite table
Use a pie chart to represent this data

| Colours | Red | Yellow | Black |
| --- | --- | --- | --- |
| frequency | 18 | 24 | 18 |

................................................................................................
................................................................................................
................................................................................................

اللهم اجعل هذا العمل خالصا لوجهك الكريم
واكتب له القبول والنفع يا كريم يا وهّاب.

FOLLOW US

AHMED NASSR

30

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

**1** If a = |−5|, b = −7, then a × b = ........... .

(a) 35 (b) −35 (c) −7 (d) 5

**2** The number of subsets of the set {0 , 2 , 9} is .............. .

(a) 3 (b) 6 (c) 8 (d) 9

**3** The result of subtacting 7a from 15a is ................ .

(a) −8a (b) 8a (c) $8a^2$ (d) −22 a

**4** Obtuse angle supplements ........... angle.

(a) acute (b) straight (c) obtuse (d) right

**5** 2x = 2, then 3x − 1 = ............ .

(a) 2 (b) 3 (c) 4 (d) 5

**6** Ø ........... {0 , 100}

(a) ∈ (b) ∉ (c) ⊂ (d) ⊄



**7** If $\frac{x}{7} = \frac{10}{35}$ , then x − 3 = ............... .

(a) −1 (b) 1 (c) 2 (d) −2

**8** If $L_1$ and $L_2$ are to coplanar straight lines, $L_1 \perp L_3$ and $L_2 \perp L_3$ then ...........

(a) $L_1 // L_2$ (b) $L_1 \perp L_2$ (c) $L_1$ intersects $L_2$ (d) $L_1$ is coincides $L_2$

**9** If the origin point is the midpoint of AB and A located in the 2nd quadrant, in which quadrant is point B located?

(a) 1st quadrant (b) 3rd quadrant
(c) 2nd quadrant (d) 4th quadrant

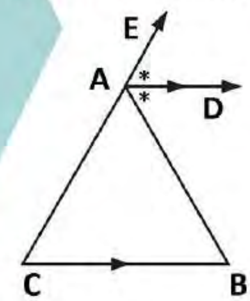
AHMED NASSR

## Q2: ANSWER THE FOLLOWING ( 21 marks )

**1** A building of height 80m was pictured by a scale 1 : 2,000
Find the height of this building in the picture.

4 cm

**2** $\overrightarrow{AD}$ // $\overline{CB}$, $\overline{AD}$ bisects ∠BAE
, m(∠B) = 52°,
Find m(∠BAD) , m(∠C)




BAD = 52 C = 52

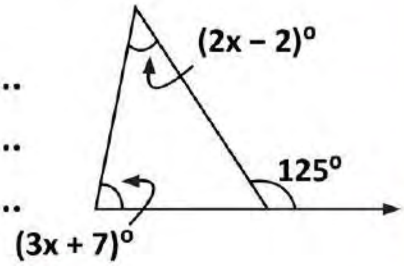
**3** Murad deposit 75,000 L.E in Al-Ahly bank, with annual interest 23%
Find the total amount which he gets at the end of one year.

92,250 L.E

**4** Find the S.S of a + 5a − 2 = 2 (3 − a) in Q

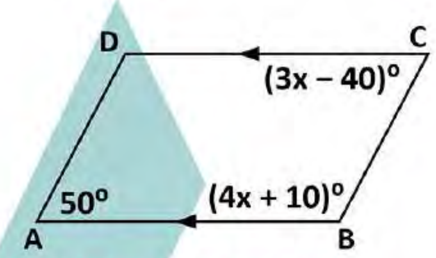
S.S = { 2 }

**5** Find value of x:




$x = 24^\circ$

**6** In the opposite figure:
Prove that ABCD is a parallelogram.




$\because$ DC // AB

$\therefore m(\angle C) + m(\angle B) = 180^\circ$ (interior)

$\therefore x + 20 + 5x - 20 = 180^\circ$

$\therefore 6x = 180$ , So $x = 30^\circ$

$\therefore m(\angle B) = 5 \times 30 - 20 = 130^\circ$

$\because m(\angle B) + m(\angle A) = 180^\circ$ (they are in interior position)

$\because$ DA // CB

$\therefore$ ABCD is a parallelogram

**7** The following data represents the number of shirts sold by clothes shop over 30 days.

| 13 | 32 | 12 | 33 | 27 | 37 | 44 | 8 | 26 | 32 |
|---|---|---|---|---|---|---|---|---|---|
| 36 | 41 | 45 | 9 | 38 | 16 | 46 | 48 | 29 | 15 |
| 13 | 32 | 14 | 18 | 28 | 34 | 25 | 7 | 18 | 33 |

Represent these data using a stem-and-leaf plot,
The find the median and the mode.

| Stems | Leaves |
|---|---|
| 0 | 7 8 9 |
| 1 | 2 3 3 4 5 6 8 8 |
| 2 | 5 6 7 8 9 |
| 3 | 2 2 2 3 3 4 6 7 8 |
| 4 | 1 4 5 6 8 |

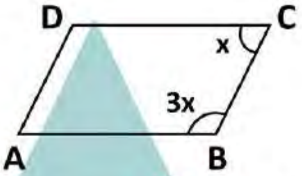
Mode = 32 Median = 28.5

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

**1** If 2ab = 10, then 3ab = .............. .

(a) 5 (b) 6 (c) 15 (d) 30

**2** In the opposite figure:
ABCD is a parallelogram, then m(∠A) ............. .




(a) 30° (b) 45° (c) 60° (d) 135°

**3** In the parallelogram, each two consecutive angles are .................

(a) complementary (b) equal in measure (c) supplementary (d) reflex

**4** If C(-3 , y) is the midpoint of AB where A(x , -6) and B(1 , -8), then x + y = ........ .

(a) -11 (b) 11 (c) -18 (d) -14

**5** {1 , 2 , 3 , 5 , 7 , 13} .......... the set of prime number

(a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$

**6** Triangle consists of two ................ angles at least

(a) acute (b) obtuse (c) right (d) reflex

**7** $-3\frac{1}{4} \times$ ........... = 1

(a) $\frac{13}{4}$ (b) $\frac{4}{13}$ (c) $\frac{-4}{13}$ (d) $\frac{-13}{4}$

**8** 4x increases ( − 4x) by .............. .

(a) zero (b) 8x (c) −8x (d) 16x

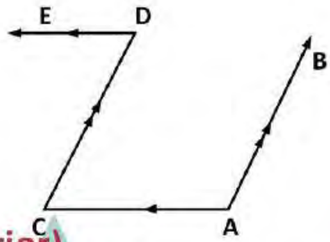
**9** If the length in drawing is 3 cm, and the length in real is 18 m,
Then the drawing scale is ............... .

(a) 1 : 6,000 (b) 1 : 600
(c) 1 : 60 (d) 1 : 6

FOLLOW US

AHMED NASSR

## Q2: ANSWER THE FOLLOWING ( 21 marks )




**1** $\overrightarrow{DE} \parallel \overline{AC}$, $\overrightarrow{AB} \parallel \overline{DC}$, $m(\angle A) = 110^\circ$

Find $m(\angle C)$, $m(\angle D)$

$\because$ AB // CD

$\therefore m(\angle C) = 180 - 110 = 70^\circ$ (interior)

$\because$ CA // DE

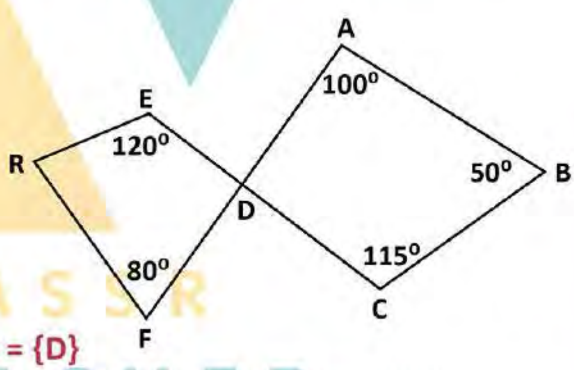
$\therefore m(\angle D) = m(\angle C) = 70^\circ$ (alternate)

**2** If X = { 7 , 5 , 4 , 1} , Y = { 9 , 4 , 5 , 2 } , Z = { 2 , 10 }, Find:

(a) $X \cap Y$ = {5 , 4} .

(b) $Y \cup Z$ = {9, 4, 5, 2, 10} .

(c) { 4 , 5 , 6 } $\not\subset$ Y




**3** $AF \cap CE = \{D\}$, $m(\angle A) = 100^\circ$

$m(\angle C) = 115^\circ$, $m(\angle B) = 50^\circ$

$m(\angle F) = 80^\circ$, $m(\angle E) = 120^\circ$

Find $m(\angle R)$

$\because$ ABCD is a quadrilateral

$\therefore m(\angle CDA) = 360 - [115 + 50 + 100]$

$= 95^\circ$

$\because AF \cap CE = \{D\}$

$\therefore m(\angle CDA) = m(\angle FDE) = 95^\circ$ (V.O.A)

$\because$ DFER is a quadrilateral

$\therefore m(\angle R) = 360 - [95 + 80 + 120] = 65^\circ$

**4** A picture of a building is taken with a drawing scale 1 : 100, if the height of the building in the picture is 3 cm,

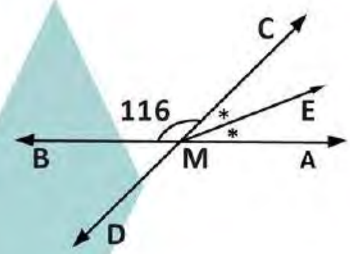
What is its real height?

3 meters

**5** $0.\overline{6} - (-\frac{1}{6}) = 25\% + y$, Find the value of y

$\frac{7}{12}$

**6** $\overleftrightarrow{AB} \cap \overleftrightarrow{CD} = \{M\}$, m( ∠CMB) = 116°
, $\overrightarrow{ME}$ bisects ∠AMC
Find: m( ∠AMD), m( ∠AMC), m( ∠AME)




116 64 32

**7** In the opposite stem and leaf plot:
Write all the data
Find the mode, median, Q1, and Q3

| Stems | Leaves |
|---|---|
| 4 | 1 1 2 |
| 5 | 2 3 |
| 6 | 2 2 2 |
| 7 | 1 3 5 |
| Key \| | 4\|1 meas 41 |

Mode = 62
Median = 62
Q1 = 42
Q3 = 71

AHMED NASSR

# FINAL REVISION 2025 - FIRST TERM

## PREP 1 - MODEL ( 3 )

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

**1** In the parallelogram, each two opposite angles are ..................

ⓐ complementary ⓑ equal in measure ⓒ supplementary ⓓ reflex

**2** The sum of $x + 2y - 3z$ and $-2y - x - 3z$ is ............. .

ⓐ $-6z$ ⓑ zero ⓒ $6z$ ⓓ $2x - 4y + 6z$

**3** The projection of the point (-3 , 5) on x-axis is ............. .

ⓐ (5 , -3) ⓑ (0 , 5) ⓒ (-3 , 0) ⓓ (3 , -5)

**4** Drawing > 1, then it expresses ............................ .

ⓐ reduction ⓑ minimization ⓒ enlargement ⓓ otherwise

**5** In parallelogram XYZL, if m ($\angle X$) = $\angle$ m ($\angle Y$), Then m($\angle Y$) = .............. °.

ⓐ 120 ⓑ 45 ⓒ 90 ⓓ 180

**6** If $a + b = 0$, where $a \neq b$, then $a \times b$ ............ zero.

ⓐ > ⓑ < ⓒ = ⓓ ≥

**7** Three times a number is 27, then $\frac{1}{3}$ this number = ............. .

ⓐ 9 ⓑ 12 ⓒ 27 ⓓ 3

**8** If $X \subset Y$, Then $X \cap Y$ = ............. .

ⓐ X ⓑ Y ⓒ $X \cup Y$ ⓓ otherwise

**9** If two straight lines intersect, then each two vertically angles are .....

ⓐ supplementary ⓑ adjacent

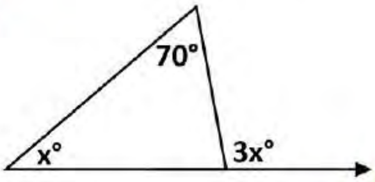
ⓒ equal in measure ⓓ complementary

FOLLOW US

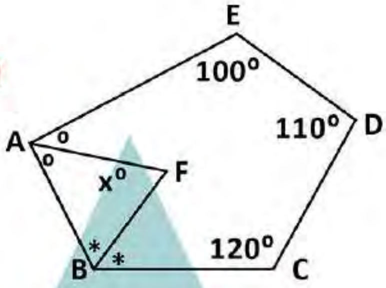
## Q2: ANSWER THE FOLLOWING ( 21 marks )

**1** Find the value of x of the following:

ⓐ




ⓑ




35

75

**2** Find the S.S of the following equations in N:

ⓐ $6x - 2x + 7 = 4$

Ø

ⓑ $4(x - 1) = 3(x + 1)$

{7}

**3** ABC is a triangle in which the ratio between its angles is 5 : 7 : 8,
Find the measure of each angle.

First = 45
Second = 63
Third = 72

**4** Three consecutive odd numbers whose sum is 213, what are there numbers?

69 , 71 , 73

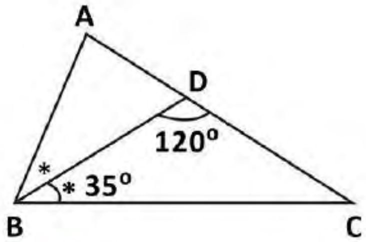
FOLLOW US

**5** In the opposite figure:

BD bisects $\angle ABC$, $m(\angle DBC) = 35^o$

$m(\angle BDC) = 120^o$

Find: $m(\angle A)$




in $\Delta$ DCB

$\because m(\angle CDB) = 120°$, $m(\angle DBC) = 35°$

$\therefore m(\angle C) = 180 - [120 + 35]$

$= 25°$

in $\Delta$ ABC

$\therefore m(\angle A) = 180 - [35 + 70]$

$= 75°$

**6** If the scale on the map is 1 : 600,000 and the distance between two points on the map is 4.5 cm, Find the real distance between the two points

27 km

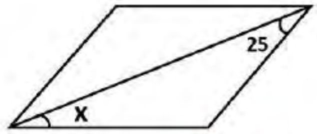
**7** Write the expression: 7m - 3n - 5m + 4n in its simplest form

2m + n

AHMED NASSR

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

**1** In opposite figure:
ABCD is a rhombus what is the value of x?




(a) 25° (b) 50° (c) 100° (d) 130°

**2** −3 exceeds 5 by amout of ............. .

(a) −8 (b) −2 (c) 2 (d) 8

**3** The centre of the first set of the sets : 7-, 13-, 19-, 25- is ..............

(a) 6 (b) 7 (c) 10 (d) 13

**4** The zero angle complements ............ angle.

(a) zero (b) acute (c) obtuse (d) right

**5** The solution set of the equation 4x = −12 in N is ............... .

(a) {−3} (b) {3} (c) Ø (d) {0}

**6** The sum of measures of the interior angles of any quadrilateral equals .......... .

(a) 270° (b) 360° (c) 180° (d) 90°



**7** If (3 , m − 2) lies on the X-axis, what is the value of m?

(a) −3 (b) −2 (c) 2 (d) 3

**8** If two ratio equal, then the product of extremes ............ the product of means

(a) less than (b) equals (c) greater than (d) otherwise

**9** Which of the following equations is equivalent to the equation x + 3 = 12

(a) x − 3= −12
(b) x + (−3) = 12
(c) x − (−3) = 12
(d) x − (−3) = −12

AHMED NASSR

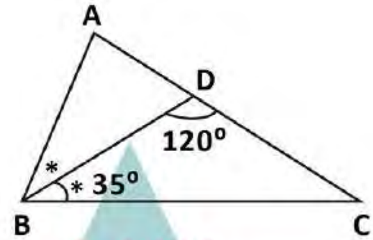
## Q2: ANSWER THE FOLLOWING ( 21 marks )

**1** In the opposite figure:

BD bisects $\angle$ABC, m($\angle$DBC) = 35°

m($\angle$BDC) = 120°

Find: m($\angle$A) in Δ DCB




∵ m($\angle$CDB) = 120° , m($\angle$DBC) = 35°

∴ m($\angle$C) = 180 – [120 + 35]

= 25°

in Δ ABC

∴ m($\angle$A) = 180 – [35 + 70]

= 75°

**2** A man passed away, leaving 150,000 L.E for his wife, two sons and one daughter, If his wife´s share is $\frac{1}{8}$ of the total amount, and the remaining sum is to be distributed among his children, What is the share of each son and the daughter, If the share of the son is twice the share of the daughter.

Share of daughter = 26,250 L.E

Share of each son = 52,500 L.E

**3** In the opposite table, the measure of circular sector of Handball sector is ....216.... °.

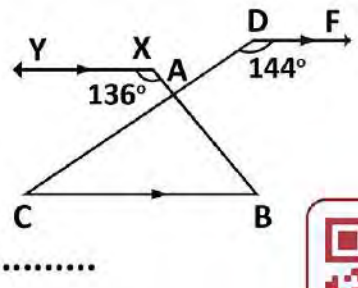
| Sports | Football | Handball | Tennis |
|---|---|---|---|
| frequency | 140 | 360 | 100 |

**4** In the opposite figure :

BC // DF // XY

tm($\angle$D) = 144° , m($\angle$X) = 136°

Find with proof: m( $\angle$BAC)




∵ DE // CB

∴ m( $\angle$C) = 180 – 144 = 36° (interior)

∵ XY // CB

∴ m( $\angle$B) = 180 – 136 = 44 (interior)

in Δ ABC

∴ m($\angle$BAC) = 180° – ( 44° + 36° )

= 100°

FOLLOW US

**5** Alaa purchased a mobile phone for 16,600 L.E and sold it for 17,762 L.E
Calculate the percent of Alaa´s profit.

.............................................................................................

..............................7 %..............................

.............................................................................................

**6** If X = { 5 , 1 , 7 , 9} , Y = { 9 , 3 , 7 , 2 } , Z = { 7 , 5 }, Find:

ⓐ $X \cap Y$ = {7 , 9}...................... .

ⓑ $Y \cup Z$ = {9, 3, 7, 2, 5}..................... .

**7** Find the S.S of the following equations in Q:

ⓐ 4 (x + 1) = 2 (x − 1)

..............................................

{−3}..............................................

..............................................

ⓑ 3x + 6 = 30 − 5x

..............................................

{3}..............................................

..............................................

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

1. The additive inverse of $(-3)^{zero}$ is .............. .

   **ⓐ −1** ⓑ 1 ⓒ 3 ⓓ −3

2. The decrease of −3ab than 2ab is ................ .

   ⓐ −ab ⓑ ab ⓒ −5ab **ⓓ 5ab**

3. −m + m = 0 is called .................... property

   ⓐ identity **ⓑ inverse** ⓒ distributive ⓓ closure

4. For a set of values: if $\overline{X} = 50$ and $\sum (f.\ x) = 2{,}500$, what is the value of $\sum f$?

   ⓐ 125,000 ⓑ 2,550 **ⓒ 50** ⓓ 2,450

5. If the ratio of two complementary angles is 7 : 11, then the measure of the smaller angle is .................

   ⓐ 145° ⓑ 70° ⓒ 90° **ⓓ 35°**

6. If x < 0 and y > 0, in which quadrant is the point (x , -y) located?

   ⓐ 1st quadrant ⓑ 2nd quadrant **ⓒ 3rd quadrant** ⓓ 4th quadrant

7. If angle measure Y complements an angle of measure ...........

   ⓐ 180° − Y **ⓑ 90° − Y** ⓒ 180° + Y ⓓ 90° + Y

8. The sum of lengths of any two sides of a triangle ........... the length of the third side

   **ⓐ >** ⓑ = ⓒ < ⓓ ≥

9. If the original price of a mobile is 17,700 LE, then its sale price after apply a discount 12% is .....................

   ⓐ 2,124 ⓑ 19,824 **ⓒ 15,576** ⓓ 15,756

FOLLOW US

AHMED NASSR

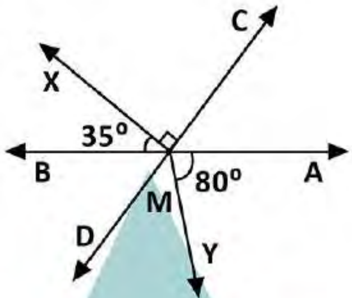
# Q2: ANSWER THE FOLLOWING ( 21 marks )

**1** In the opposite figure:

$AB \cap CD = \{M\}$, $m(\angle CMX) = 90^o$

$m(\angle XMB) = 35^o$, $m(\angle AMY) = 80^o$

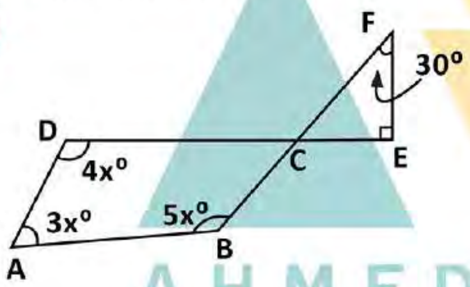
Find: $m(\angle AMD)$ , $m(\angle BMY)$



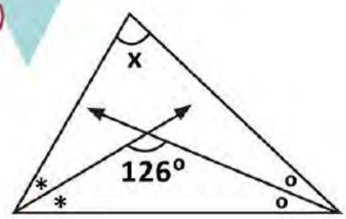

125 100

**2** Find the value of x:

ⓐ




ⓑ




25 72



**3** Find the S.S of the following equations in N:

ⓐ $-2(x + 1) = 3$

Ø

ⓑ $3(x - 2) = 5x - 10$

{2}

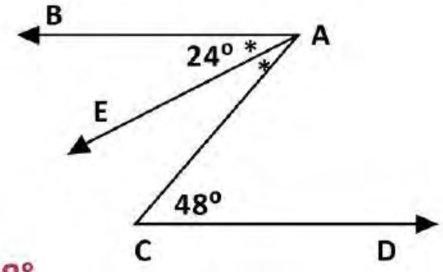
FOLLOW US

**4** In the opposite figure:

AE bisects $\angle BAC$, $m(\angle BAE) = 24^o$

m, $(\angle ACD) = 48^o$

Prove that: AB // CD




$\because$ AE bisects $\angle CAB$

$\therefore m(\angle A) = 24 + 24 = 48°$

$\because m(\angle A) + m(\angle C) = 180°$

(they are in interior position)

$\therefore$ AB // CD

**5** Murad deposit 75,000 L.E in Al-Ahly bank, with annual interest 23%

Find the total amount which he gets at the end of one year.

92,250 L.E

**6** If ABCD is a paralleogram where A(-1 , 1), B(4 , 2), and D(1 , 4)

Determine the coordinates of the following:

(a) The point of intersection of its diagonal

(2.5 , 3)

(b) The vertex C

(6 , 5)



**7** The following data represents the number of shirts sold by clothes shop over 30 days.

| 11 | 35 | 14 | 31 | 27 | 32 | 45 | 7 | 22 | 22 |
|---|---|---|---|---|---|---|---|---|---|
| 36 | 22 | 45 | 9 | 38 | 16 | 46 | 42 | 29 | 15 |
| 15 | 32 | 14 | 48 | 38 | 34 | 22 | 7 | 18 | 33 |

Represent these data using a stem-and-leaf plot,

The find the median and the mode. Draw by yourself

AHMED NASSR

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

**1** In the quadrilateral ABCD, If m( ∠A) = 3 m (∠B) = m(∠C) = 120° , then m(∠D) = ..........

(a) 60° (b) 40° (c) 80° (d) 160°

**2** The additive identity is ........... .

(a) 0 (b) 1 (c) −1 (d) 2

**3** If x + 3 = 5, x ∈ $Z^-$ , Then the solution set is .............. .

(a) {−3} (b) {5} (c) {−5} (d) Ø

**4** If 0.8 , x , 4 and 5 are in a proportion, then x = ............. .

(a) 0.1 (b) 2 (c) 1 (d) 0.2

**5** If $\frac{|a|}{7} = 6$, then a = ............ .

(a) 24 (b) −42 (c) 42 (d) ±42

**6** If m(∠ A ) = 46 °. then m ( reflex ∠ A) = .............. °

(a) 44 (b) 134 (c) 314 (d) 360

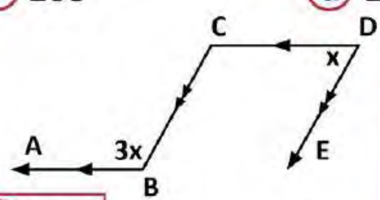
**7** In the triangle ABC, $\frac{AB + BC}{AC}$ ............ 1

(a) > (b) = (c) = (d) ≥

**8** If the arthimetic mean of the values 5, 4, 8, a, a + 4 is 21, then a = ............ .

(a) 29 (b) 42 (c) 105 (d) 21

**9** In the opposite figure:
CD // BA , DE // CB, then: x = ..........

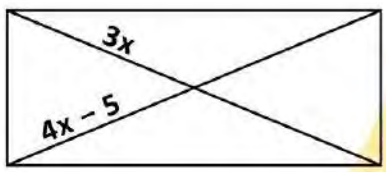



(a) 60° (b) 45°
(c) 120° (d) 90°

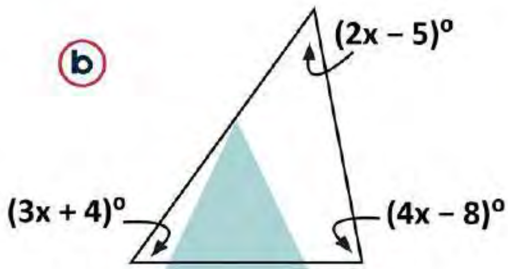
## Q2: ANSWER THE FOLLOWING ( 21 marks )

**1** Find the value of x:

(a)




(b)




5 21

**2** A shopkeeper bought some goods for 45,000 L.E. He spent 5,000 L.E to transport them. He sold these goods for 62,500 L.E,
Find percentage of profit

25%



**3** Write the following expressions in the simplest form:

(a) $-5x - 7y - 7x - 2y + 7y - 3x$  (b) $2(3x - 4) - 3(x - 2)$

$-15x - 2y$  $3x - 2$

**4** By using multiplicative properties, Find the value of each of the following:

$$\frac{3}{4} \times 35 + 35 \times \frac{1}{2} - 35 \times \frac{1}{4}$$

35

FOLLOW US

**5** A butterfly is of length 3.75 mm, Find the drawing scale if its photo length is 0.027 m

36 : 5

**6** In the triangle ABC, where the length of AB is 5 cm and the length of BC is 7 cm. What the smallest possible integer value for the length AC?

3 cm

**7** In the opposite stem and leaf plot:
Write all the data
Find the mode, median, Q1, and Q3

| Stems | Leaves |
|---|---|
| 2 | 1 1 2 |
| 3 | 2 3 |
| 4 | 2 2 2 |
| 5 | 1 3 5 |

Key | 2|3 meas 3.2



Mode = 4.2
Median = 4.2
Q1 = 2.2
Q3 = 5.1

## PREP 1 - MODEL ( 7 )

AHMED NASSR

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

**1** The arithmetic mean of the values 3, 4, 8, a, a + 2 is 15, then a = .............

ⓐ 29 ⓑ 58 ⓒ 75 ⓓ 17

**2** If the two vertically angles are complementary angles, the the measure of each angle is ...............

ⓐ $45^\circ$ ⓑ $50^\circ$ ⓒ $180^\circ$ ⓓ $90^\circ$

**3** The additive inverse of x − 5 is .........

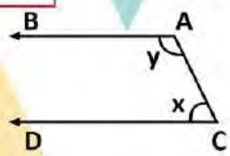
ⓐ x − 5 ⓑ −x − 5 ⓒ −x + 5 ⓓ 5

**4** If the ratio 7 : 13 is the same ratio x : 52, then x = ............... .

ⓐ 14 ⓑ 21 ⓒ 28 ⓓ 35

**5** In the opposite figure:

$\overrightarrow{AB} // \overrightarrow{CD}$, $\frac{x}{y} = \frac{7}{11}$ , what is the of x?




ⓐ $60^\circ$ ⓑ $70^\circ$ ⓒ $100^\circ$ ⓓ $110^\circ$

**6** If A = { 5 , 7 , 2}, Then 57 ............ A

ⓐ $\in$ ⓑ $\notin$ ⓒ $\subset$ ⓓ $\not\subset$



**7** If ∠X complements ∠Y, m(∠X) = 2m(∠Y), then m(∠Y)= .............

ⓐ $45^\circ$ ⓑ $30^\circ$ ⓒ $60^\circ$ ⓓ $90^\circ$

**8** 8 + (−10) > ............... .

ⓐ 2 ⓑ −2 ⓒ 0 ⓓ −4

**9** From the following stem-and-leaf plot, the mode = ......... .

| Stems | Leaves |
|---|---|
| 2 | 1 1 3 5 6 |
| 3 | 3 4 4 5 6 |
| 4 | 7 8 8 8 9 |
| 5 | 0 1 3 5 7 |

ⓐ 4 ⓑ 48 ⓒ 8 ⓓ 34

FOLLOW US

## Q2: ANSWER THE FOLLOWING ( 21 marks )

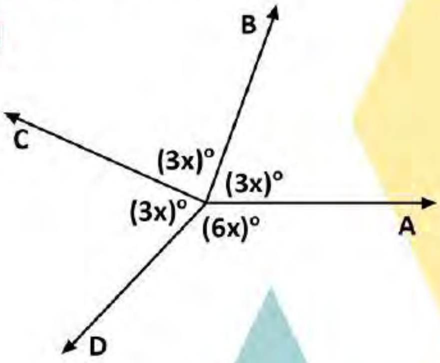
**1** If X = { 1 , 3 , 7 , 5} , Y = { 9 , 4 , 6 , 2 } Find:

ⓐ $X \cap Y$ = .........Ø......... .

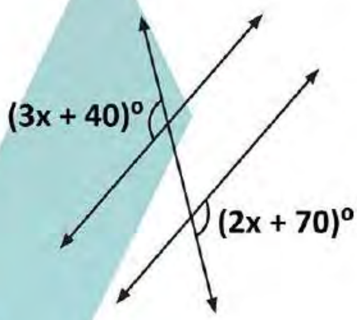
ⓑ $Y \cup X$ = {1, 3, 7, 5, 9, 4, 6, 2} .

**2** Find value of x:

ⓐ




ⓑ




.....................................................................................................
20 30
.....................................................................................................
.....................................................................................................

**3** Divide 3,600 L.E among three persons such as that ratio between the share of first person to second person is 4 : 3 and the share of the third is half the share of first.

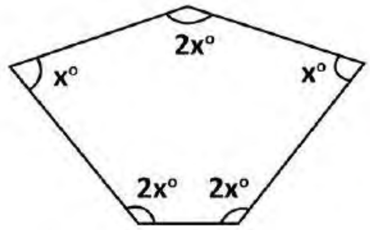
Find the share of each person.

First = 1,600 L.E
Second = 1,200 L.E
Third = 800 L.E

**4** $2a^2 - 3ab - 5b^2$ decreases $4a^2 + 3b^2 + ab$ by .............

$2a^2 + 8b^2 + 4ab$

**5** In the opposite figure :
Find with giving reason
The value of X



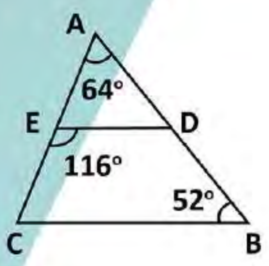

..........................................................................................

x = 67.5

..........................................................................................

..........................................................................................

**6** In the opposite figure:
In the ABC, m(∠A) = 64°, m(∠B) = 52°
, m(∠DEC) = 116°
, E ∈ AC, D ∈ AB
Prove that: ED // CB




..........................................................................................

..........................................................................................

..........................................................................................

**7** The following data represents the number of shirts sold by clothes shop over 30 days.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 13 | 32 | 12 | 33 | 27 | 37 | 44 | 8 | 26 | 32 |
| 36 | 41 | 45 | 9 | 38 | 16 | 46 | 48 | 29 | 15 |
| 13 | 32 | 14 | 18 | 28 | 34 | 25 | 7 | 18 | 33 |

Represent these data using a stem-and-leaf plot,
The find the median and the mode.

| Stems | Leaves |
|---|---|
| 0 | 7 8 9 |
| 1 | 2 3 3 4 5 6 8 8 |
| 2 | 5 6 7 8 9 |
| 3 | 2 2 2 3 3 4 6 7 8 |
| 4 | 1 4 5 6 8 |

Mode = 32 Median = 28.5

FOLLOW US

AHMED NASSR

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

**1** The length of the projection of a line segment on a straight line ........... the length of the main line segment.

ⓐ > ⓑ = ⓒ < ⓓ ≤

**2** The numbers 5, 4, ..... can be lengths of sides of a triangle.

ⓐ 8 ⓑ 9 ⓒ 10 ⓓ 12

**3** "The sum of three consecutive odd numbers is 87" as equation is ............... .

ⓐ $3x = 87$ ⓑ $3x + 3 = 87$ ⓒ $3x + 4 = 87$ ⓓ $3x + 6 = 87$

**4** If $\angle A$ complements $\angle B$ and $m(\angle A) = \frac{2}{3} m(\angle B)$, then $m(\angle B)$ = ....... °

ⓐ 18 ⓑ 36 ⓒ 54 ⓓ 90

**5** If $x < 0$ and $y > 0$, in which quadrant is the point $(-x , -y)$ located?

ⓐ 1st quadrant ⓑ 2nd quadrant ⓒ 3rd quadrant ⓓ 4th quadrant

**6** $2x^2 + 4x^2$ = ........... .

ⓐ $6x^4$ ⓑ $6x^2$ ⓒ $8x^2$ ⓓ $8y^4$

**7** Which of the following drawing scales represent enlargement?

ⓐ 1 : 20 ⓑ 5 : 23 ⓒ 7 : 3 ⓓ 4 : 35

**8** If $\frac{x+4}{6} = \frac{7}{14}$, The x = .............. .

ⓐ −7 ⓑ 7 ⓒ −1 ⓓ 1

**9** If two adjacent sides of a parrallelogram are equal in length, then becomes ................ .

ⓐ a square ⓑ a rhombus
ⓒ a rectangle ⓓ a trapezium

## Q2: ANSWER THE FOLLOWING ( 21 marks )

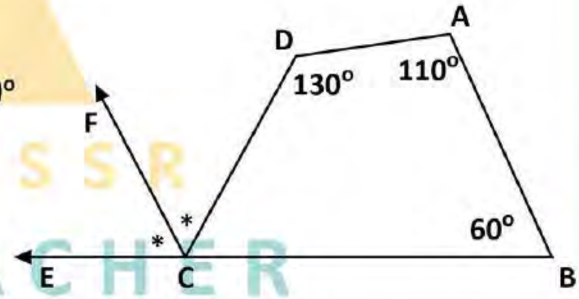
**1** A TV price after deduction rate of 16% is 12,600 L.E,
What is the TV price before the deduction?

15,000 L.E

**2** In triangle XYZ, where the length of XY is 8 cm, and the length of YZ is 5 cm
What is the smallest integer that can represent the length of the third side?

4 cm

**3** In the opposite figure:
m(∠A) = 110°, m(∠D) = 130°, m(∠D) = 60°
, E ∈ BC, CF bisects ∠DCE




120

**4** Find the S.S in Q of the following equation:

$$\frac{5}{4+4x} = \frac{3}{1-2x}$$

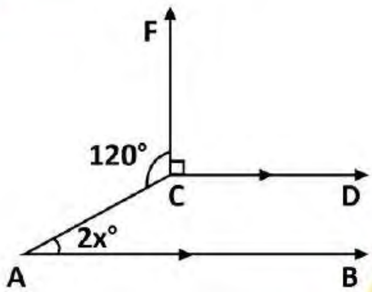
S.S = { $\frac{-7}{22}$ }



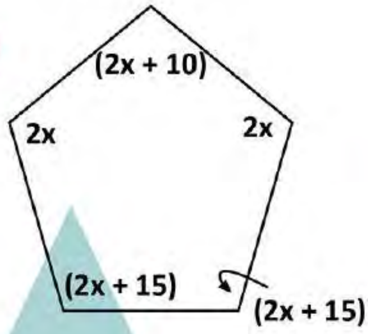
FOLLOW US

**5** Find the value of x:

ⓐ

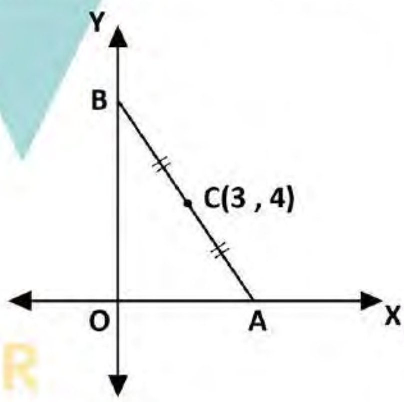



ⓑ




15 ........................................ 50

**6** In the opposite figure:
Point C is the midpoint of AB
Find the coordinates of each of A and B




A( 6 , 0) B(0 , 8 )

**7** In a survey for Prep 1 students about their favorite color,
Represent the following table by Pie chart.

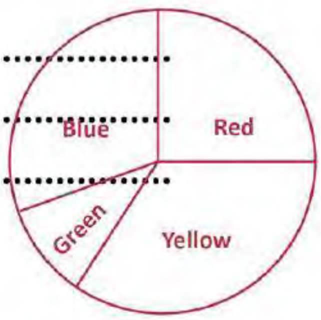
| Colors | Red | Blue | Green | Yellow |
|---|---|---|---|---|
| Percentage | 25% | 30% | 10% | 35% |

Red = $\frac{25}{100} \times 360 = 90°$

Blue = $\frac{30}{100} \times 360 = 108°$

Green = $\frac{10}{100} \times 360 = 36°$

Yellow = $\frac{11}{36} \times 360 = 126°$




FOLLOW US

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

**1** $7x + 5y + z$ increases $2x - y + z$ by .............

ⓐ $5x + 4y + 2z$ ⓑ $5x + 6y$ ⓒ $9x + 4y$ ⓓ $9x - 6y - 2z$

**2** If the mean of the following set of data $x + 1$ , 8, $2x + 4$, $x - 5$, $x + 2$ is 7
Then the value of x = ............. .

ⓐ 8 ⓑ 5 ⓒ 3 ⓓ 2

**3** ABCD is a parallelogram in which: $m(\angle A) + m(\angle C) = 140^0$, then $m(\angle B)$ = ....... .

ⓐ $40^o$ ⓑ $70^o$ ⓒ $110^o$ ⓓ $220^o$

**4** The first proportional of 12 , 3 and 4 is ............. .

ⓐ 15 ⓑ 9 ⓒ 7 ⓓ 3

**5** The multiplicative identity is .................. .

ⓐ 0 ⓑ 1 ⓒ −1 ⓓ 2

**6** The two straight line perpendicular to a third straight line is the same plane are ..................

ⓐ perpendicular ⓑ intersecting ⓒ parallel ⓓ coincident

**7** k + k + k = ............... .

ⓐ $k^3$ ⓑ $3k$ ⓒ $3k^3$ ⓓ $k + 3$

**8** The result of subtracted $\frac{-5}{7}$ from $\frac{3}{14}$ equals ............ .

ⓐ $\frac{3}{14}$ ⓑ $\frac{13}{14}$ ⓒ $\frac{-1}{2}$ ⓓ $\frac{1}{2}$

**9** A sum of money 420 L.E was distributed between Murad and Farida in the ratio 2 : 5, then the share of Farida is ............ L.E

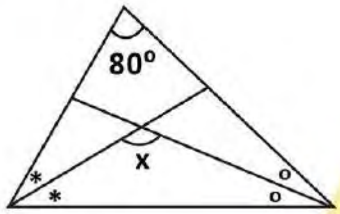
ⓐ 120 ⓑ 300
ⓒ 280 ⓓ 720

FOLLOW US

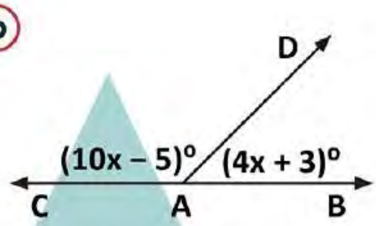
## Q2: ANSWER THE FOLLOWING ( 21 marks )

**1** **Find the value of x:**

(a)




(b)




130 13

**2** **If the point ( a – 2 , 3a + 9) lies on x-axis, determine the quarter in which the point ( a , 6 – a ) is located**

Second quadrant

**3** **The difference between two natural numbers is 5 and their sum is 21 What are the two numbers ?**

the two numbers 13 and 8

**4** **When does a quadrilateral become a parallelogram? List 3 cases**

The diagonals bisect each other
Each two opposite sides are parallel
Each two consecutive angles are supplementary

AHMED NASSR

**5** A father distributed 225 L.E among his three sons. The share of the first was third of the sum and the ratio between the share of second and the share of third is 2 : 3,

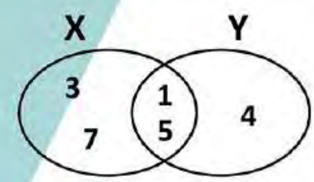
Find the share of each of them.

First = 75 L.E

Second = 60 L.E

Third = 90 L.E

**6** In the opposite figure:




X = {3 , 7 , 1 , 5}  Y = {1 , 5 , 4}

X ∩ Y = {1 , 5} .

X ∪ Y = {1 , 5 , 3 , 7 , 4}

**7** The opposite table represents hours of work of 100 workers.

| No. of hours (x) | 4 | 6 | 7 | 8 | 9 | 10 | 13 |
|---|---|---|---|---|---|---|---|
| No. of workers ($f$) | 15 | 13 | 30 | m | 10 | 8 | 2 |

Find the value of m, then find mean of the hours of work

m = 100 - 78 = 22

$\overline{X} = \frac{720}{100} = 7.2$

| x | $f$ | $f$.x |
|---|---|---|
| 4 | 15 | 60 |
| 6 | 13 | 78 |
| 7 | 30 | 210 |
| 8 | 22 | 176 |
| 9 | 10 | 90 |
| 10 | 8 | 80 |
| 13 | 2 | 26 |
| Sum | 100 | 720 |

## Q1: CHOOSE THE CORRECT ANSWER ( 9 marks )

1. The lengths of two side of an isosceles triangle are 3 cm and 7 cm, Then the third side could be ............... cm

   (a) 3 (b) 4 (c) 5 **(d) 7**

2. If $5x + 8x + 2x + 4x = 114$, then $5x + 3 =$ ............ .

   **(a) 33** (b) 35 (c) 47 (d) 8x

3. If $x \div y = 1$, then $x =$ ............ .

   (a) 1 (b) x **(c) y** (d) 0

4. If $a : b : c = 4 : 5 : 3$, and $b - c = 9$, Then the value of $a =$ ........... .

   (a) 9 **(b) 18** (c) 15 (d) 21

5. If $\frac{x}{y} = \frac{5}{7}$ , then $\frac{7x}{5y} =$ ........... .

   (a) $\frac{5}{7}$ **(b) 1** (c) $\frac{7}{5}$ (d) $\frac{1}{5}$

6. For a set of values: if $\overline{X} = 20$ and $\sum (f. x) = 2{,}500$, what is the value of $\sum f$?

   **(a) 50,000** (b) 5,000 (c) 1,250 (d) 125

7. If the real length of an insect is 0.7 mm. and its length after magnification is 6.3 cm then the ratio of magnification is ............. .

   (a) 9 : 1 **(b) 90 : 1** (c) 900 : 1 (d) 9,000 : 1

8. If a straight line cuts two parallel straight lines, then each two interior angles are ....

   (a) complementary (b) perpendicular **(c) supplementary** (d) equal in measure

9. The sum of supplementary angles equals the sum of the measures of ............... angles.

   **(a) 2 right** (b) 4 right
   (c) 3 right (d) 5 right

## Q2: ANSWER THE FOLLOWING ( 21 marks )

**1** Murad earns a monthly salary of 7,000 L.E, and the employees´ salaries were increased by the rate 15%. What is Murad´s salary after the increase and what the amount of the increase?

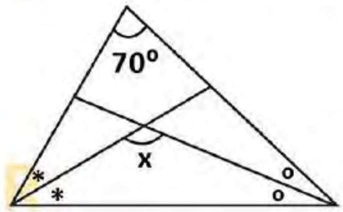
The salary after increase = 8,050 L.E

Amout of an increase = 1,050 L.E

**2** What is the increase of the expression: $4k - 3n + 2m$ than $5k + m - 2n$

$-k - n + m$

**3** In the opposite figure:
Find the value of x

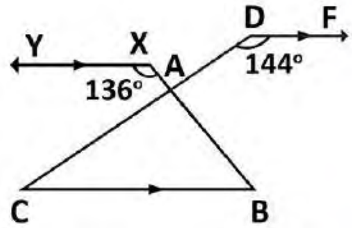



x = 125

**4** Three consecutive numbers whose sum is 213, what are there numbers?

70 , 71 , 72

**5** In the opposite figure :
BC // DF // XY
,m(∠D) = 144°, m(∠X) = 136°
Find with proof: m(∠BAC)




∵ DE // CB
∴ m(∠C) = 180 − 144 = 36° (interior) in Δ ABC
∵ XY // CB
∴ m(∠B) = 180 − 136 = 44 (interior)
∴ m(∠BAC) = 180° − ( 44° + 36° )
= 100°

**6** ABCD is a quadrilateral where, A(−3 , −2) , B(2 , −2) , C(4 , 2) and D(−2 , 2)
Is it a parallelogram or not?

The midpoint of AC = $\left(\frac{-3+4}{2}, \frac{-2+2}{2}\right) = \left(\frac{1}{2}, 0\right)$

The midpoint of BD = $\left(\frac{2+(-2)}{2}, \frac{-2+2}{2}\right) = (0, 0)$

∵ The midpoint of AC is not equals the midpoint of BD
∴ The diagonals are not bisect each other
∴ ABCD is not a parallelogram

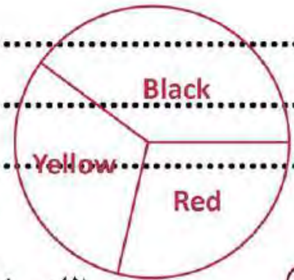
**7** If the colours preferred by 55 students in fourth grade are given in the opposite table
Use a pie chart to represent this data

| Colours | Red | Yellow | Black |
|---|---|---|---|
| frequency | 18 | 24 | 18 |

Red = $\frac{18}{60}$ × 360 = 108°

Black = $\frac{18}{60}$ × 360 = 108°

Yellow = $\frac{24}{60}$ × 360 = 144°




اللهم اجعل هذا العمل خالصا لوجهك الكريم
واكتب له القبول والنفع يا كريم يا وهّاب.

FOLLOW US


حمل الان
مجانا وحصريا
امتحانات رقم (5)
الترم الاول
ذاكرولي
RaNia SaYed
حمل
الان
حصريا

## Q1: Choose the correct answer :-

30

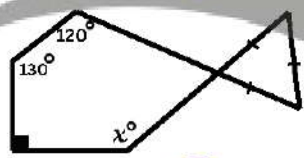
1. The result of subtracting : 7 y - 6 from 3 y + 7

(a) 10 y + 1 (b) -4 y - 1 (c) 4 y + 1 (d) -4 y + 13

2. The ratio between the side lengths in a triangle is 3 : 4 : 5. If its perimeter is 36 cm , then the length of the longest side is .........

(a) 9 cm (b) 12 cm (c) 15 cm (d) 24 cm

3. In the opposite figure:
The value of $x$= ........°




(a) 110° (b) 120° (c) 130° (d) 140°

4. If $\sum f$= 10 and $\sum(f.X)$ = 40, then the value of $\overline{X}$= ..........

(a) 4 (b) 50 (c) 30 (d) 400

5. The measure of the interior angle of a regular polygon with 10 sides is .........°

(a) 108° (b) 120° (c) 135° (d) 144°

6. If the origin point is the midpoint of $\overline{AB}$ where A (5 , - 2) then B is .....

(a) ( 2 , 5 ) (b) ( 5 , - 2 ) (c) ( - 2 , - 5 ) (d) ( - 5 , 2 )

7. Each two consecutive angles in a parallelogram are ............

(a) Perpendicular (b) Complementary (c) Supplementary (d) Equal in measure

8. The sum of the measure of the interior angles = the measure of .......

(a) a right angle (b) a straight angle (c) an acute angle (d) a reflex angle

9. $\varnothing$ ........... { 3 , 4 }

(a) $\in$ (b) $\not\subset$ (c) $\notin$ (d) $\subset$

## Q3: Answer the following :-

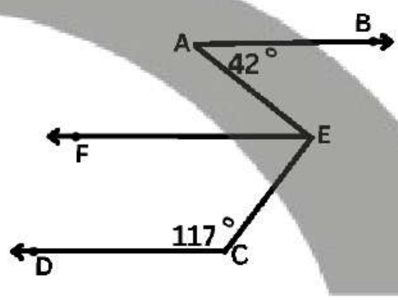
**1** A man's age is now is three times his son's age , and after two years , the sum of their ages will be 52 years. What are their ages now?

...............................................................................................................
...............................................................................................................
...............................................................................................................

**2** $\overrightarrow{AB} // \overrightarrow{CD}$ , $\overrightarrow{EF} // \overrightarrow{CD}$

m ( A) = 42°, m ( C) = 117°

Find m ( AEC )




...............................................................................................................
...............................................................................................................
...............................................................................................................
...............................................................................................................

**3** Use the distributive property to find the result:

32 x 18 - 32 x 34 + 32 x 17

...............................................................................................................
...............................................................................................................
...............................................................................................................
...............................................................................................................

**4** If the point ( a - 2 , 3 a + 9 ) lies on the $x$ - axis ,determine the quadrant in which the point ( a , 6 - a ) is located

...............................................................................................................
...............................................................................................................
...............................................................................................................
...............................................................................................................

**5** If the number of people who went to a restaurant over 11 days is as follows:

| 104 | 131 | 120 | 115 | 109 | 124 |
|---|---|---|---|---|---|
| 128 | 118 | 116 | 120 | 125 | |

| Stem | leaves |
|---|---|
| ...... | ................ |
| ...... | ................ |
| ...... | ................ |
| ...... | ................ |

Key : 13 | 1 means 131

- Complete the adjacent plot.
- Find: the mode , median , and range

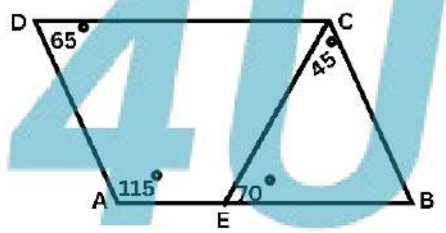
..........................................................................................

..........................................................................................

..........................................................................................

..........................................................................................

**6** In the opposite figure:
Prove that : ABCD is a parallelogram




..........................................................................................

..........................................................................................

..........................................................................................

..........................................................................................

**7** An online store receives a commission rate of 1.5% for marketing seller products. If the store sold products for 42,000,000 LE within a week ,calculate the total commission amount

..........................................................................................

..........................................................................................

..........................................................................................

..........................................................................................

## Q1: Choose the correct answer :-

| |
|---|
| 30 |

**1** A hall can accommodate 160 people. If 75 % of its seats are filled ,the number of people in the hall is ...........

(a) 40 (b) 200 (c) 120 (d) 100

**2** If m( A ) = m( B) and A supplements B ,then m( B) = ........$^\circ$

(a) $30^\circ$ (b) $45^\circ$ (c) $60^\circ$ (d) $90^\circ$

**3** If the mean of 6 consecutive even numbers is 35 , what is the smallest of these number?

(a) 36 (b) 34 (c) 32 (d) 30

**4** $Z \cup N$ = .........

(a) $\varnothing$ (b) Z (c) N (d) Q

**5** The solution set in Z for the equation: 7 - 3 x = x - 3 is ..........

(a) $\varnothing$ (b) { 2 } (c) { 1 } (d) { 3 }

**6** If the point ( 3 , k - 2 ) lies on the $x$ -axes ,then the value of K = .......$^\circ$

(a) -3 (b) -2 (c) 2 (d) 3

**7** If $L_1$, $L_2$ and $L_3$ are three lines in the same plane , $L_3 // L_1$ and $L_3 // L_2$ ,then ......................

(a) $L_2 \perp L_1$ (b) $L_3 \perp L_1$ (c) $L_2 // L_1$ (d) $L_3 \perp L_2$

**8** If $x < 0$ and $y > 0$ , in which quadrant is the point ( $x$ , - y ) located?

(a) $1^{st}$ (b) $2^{nd}$ (c) $3^{rd}$ (d) $4^{th}$

**9** If ABCD is a parallelogram , AC = BD , $\overline{AC} \perp \overline{BD}$ ,then ABCD is .............

(a) a trapezium (b) a rhombus (c) a rectangle (d) a square

## Q3: Answer the following :-

**1** Nagwa saved ( 3 x + 5y -7 ) LE , and she bought a gift for her sister for ( 2x + y + 3 ) LE. How much money remains with Nagwa?

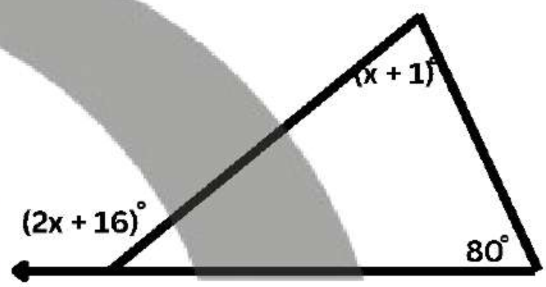
........................................................................................................

........................................................................................................

........................................................................................................

........................................................................................................

**2** In the opposite figure :
Find the value of x




....................................................................

....................................................................

....................................................................

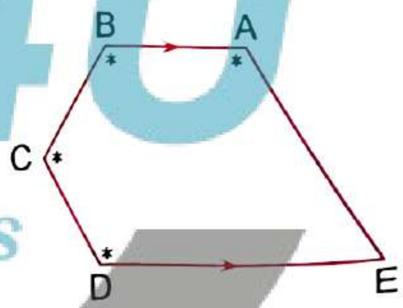
....................................................................

**3** In the opposite figure:

$\overline{AB}$ // $\overline{ED}$

m( A) = m( B) = m( C) = m( D)

Find with proof: m( E)




........................................................................................................

........................................................................................................

........................................................................................................

........................................................................................................

**4** If the favorite sport of 160 students is shown in the opposite table. Represent this data using a pie chart

| Sports | Foot ball | swimming | Volley ball | Karate |
|---|---|---|---|---|
| Frequency | 96 | 16 | 16 | 32 |

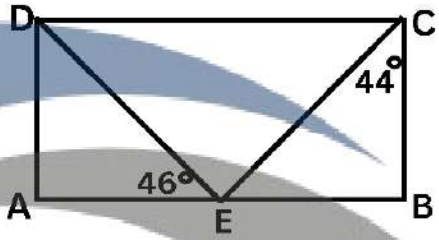
........................................................................

........................................................................

........................................................................

**5** ABCD is a rectangle , $E \in \overline{AB}$ ,m( ECB) = 44°, m( AED) = 46°

Find m( CED)



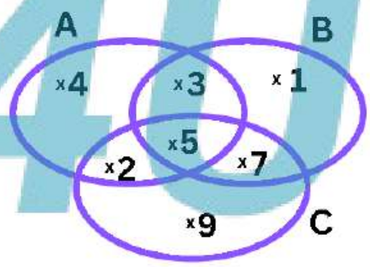

........................................................................

........................................................................

........................................................................

........................................................................

**6** From the opposite Venn diagram ,find:




1) $A \cap B$ 2) $A \cup C$

3) $A \cap B \cap C$ 4) $A \cap (B \cup C)$

........................................................................

........................................................................

........................................................................

........................................................................

**7** Omar subscribed to a home internet service for 520 LE per month ,along with a 14 % tax rate applied to the service fee. What is the tax value and the total monthly subscription cost?

........................................................................

........................................................................

........................................................................

........................................................................

## Q1: Choose the correct answer :-

30

**1** The result of subtracting $\frac{3}{5}$ from $\frac{7}{10}$ = ...........

(a) $\frac{4}{5}$ (b) $\frac{1}{5}$ (c) $\frac{1}{10}$ (d) $-\frac{4}{5}$

**2** The triangle consists of two ............ angles at least.

(a) acute (b) obtuse (c) right (d) reflex

**3** If C ( - 3 , y ) is the midpoint of $\overline{AB}$ where A ( $x$ , - 6 ) and B ( 1 , - 8 ) then $x$ + y = ........

(a) -11 (b) 11 (c) -18 (d) -14

**4** All of the following describe the center of a data except .......

(a) mode (b) mean (c) range (d) median

**5** If A = { 2 , 5 , 8 } ,then which of the following is correct ?

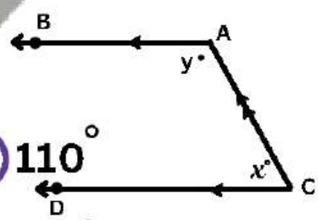
(a) $\{2\} \in A$ (b) $\{3\} \notin A$ (c) $\{5, 8\} \not\subset A$ (d) $\{2\} \subset A$

**6** If the mean of 6 consecutive even numbers is 35 , what is the smallest of these number?

(a) 36 (b) 34 (c) 32 (d) 30

**7** In the opposite figure:

$\overrightarrow{AB} \parallel \overrightarrow{CD}$ , $\frac{x}{y} = \frac{7}{11}$ ,then the value of $x$ is ........°




(a) 60° (b) 70° (c) 100° (d) 110°

**8** If ABCD is a parallelogram in which m( A) + m ( C) = 140°,then m( B) = ........°

(a) 70° (b) 40° (c) 110° (d) 220°

**9** The lengths of two sides of an isosceles triangle are 3 cm and 7 cm. then the length of the third side is .......... cm

(a) 3 cm (b) 4 cm (c) 5 cm (d) 7 cm

## Q3: Answer the following :-

**1** Mustafa drew a picture of his brother Ahmed. If the scale drawings is 1 : 4 and Ahmed's height is 160cm ,what is Ahmed's height in the picture.

........................................................................................................................

........................................................................................................................

........................................................................................................................

........................................................................................................................

**2** Three persons shared 7,200 LE. in the ratio of 3 : 4 : 5 . Calculate the share of each one.

........................................................................................................................

........................................................................................................................

........................................................................................................................

........................................................................................................................

**3** Add the two expression: 6a + 7b -2 and 2b + 5a,then find the numerical value of the result when a = 2 , b = 1

........................................................................................................................

........................................................................................................................

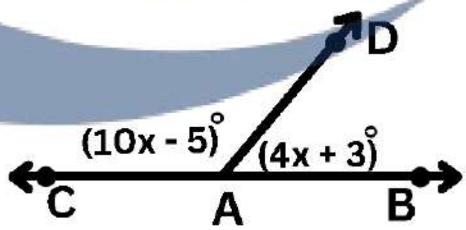
........................................................................................................................

........................................................................................................................

**4** In the opposite figure:

If $A \in \overrightarrow{BC}$

Find the value of x




........................................................................................................................

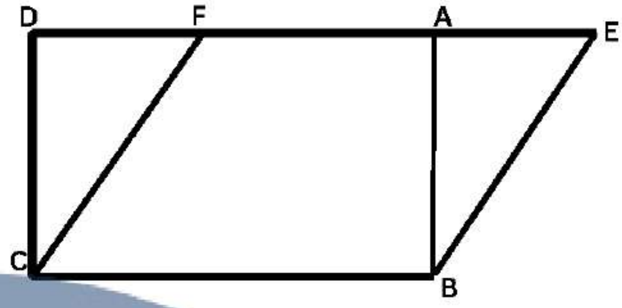
........................................................................................................................

........................................................................................................................

**5** In the opposite figure:

ABCD is a rectangle , EBCF is a parallelogram.

Prove that : AE = DF




.......................................................................................................

.......................................................................................................

.......................................................................................................

.......................................................................................................

**6** Determine the coordinates of the midpoint of $\overline{AB}$ where:

A ( 2 , - 2 ) , B ( - 6 , 8 )

.......................................................................................................

.......................................................................................................

.......................................................................................................

**7** The opposite stem-and-leaf plot represents the height of trees , in meters in the school garden

- Find the model height
- Find: the median , first quartile , and third quartile
- Find the range
- Draw the box plot

| Stem | leaves |
|---|---|
| 1 | 9 |
| 2 | 2 8 |
| 3 | 1 4 4 9 |
| 4 | 5 8 |
| 5 | 1 2 |

Key : 1 | 9 means 1.9 meters

.......................................................................................................

.......................................................................................................

.......................................................................................................

## Q1: Choose the correct answer :-

| | | | | | |
|---|---|---|---|---|---|
| 1 | d | 2 | c | 3 | d |
| 4 | a | 5 | d | 6 | d |
| 7 | c | 8 | b | 9 | d |

## Q2: Answer the questions :-

**1** Let the age of the son be x years and the age of the father be 3x years

x + 2 + 3 x + 2 = 52     4 x + 4 = 52

4x = 52 - 4 =48     x = 48 ÷ 4     x = 12

then the age of the son is 12 years

and the age of the father is 36 years



**2** $\overrightarrow{AB}$ // $\overrightarrow{EF}$ , $\overleftrightarrow{AE}$ is a transversal.

m ( A) = m ( AEF ) = 42° ( alternate angles )

$\overrightarrow{EF}$ // $\overrightarrow{CD}$ , $\overleftrightarrow{EC}$ is a transversal.

m ( EFC ) + m ( C) = 180°

( interior angles and on one side of the transversal )

m ( FEC ) = 180 - 117 = 63°

m ( AEC ) = 42 + 63 = 105°

**3** 32 x 18 - 32 x 34 + 32 x 17

= 32 ( 18 - 34 + 17 ) = 32 x 1 = 32

**4** The point lies on $x$-axis

The y-coordinate = 0

3 a + 9 = 0     3 a = - 9     a = - 3

by substituting with the value of a

The point is ( - 3 , 9 )

The point lies in the second quadrant

**5** **1**

| Stem | leaves |
|---|---|
| 10 | 4 9 |
| 11 | 5 6 8 |
| 12 | 0 0 4 5 8 |
| 13 | 1 |

Key : 11 | 5 means 115

**2** The mode = 120 , the median = 120 , the range = 131 - 104 = 27

**6** In △AEB:

m( BAE) = 45$^\circ$ , m( AEB) = 70$^\circ$

m( B) = 180 - ( 45 + 70 ) = 65$^\circ$

m( C) + m( B) = 65 + 115 = 180$^\circ$

(they are interior angles in the same side of the transversal)

$\overline{AB} // \overline{DC}$ (1)

m( D) + m( C) = 65 + 115 = 180$^\circ$

(they are interior angles in the same side of the transversal)

$\overline{AD} // \overline{BC}$ (2)

From 1 and 2 :

ABCD is a parallelogram

**7** The commission = $\frac{1.5}{100}$ x 42,000,000 = 630,000 LE.

## Q1: Choose the correct answer :-

| | | | | | |
|---|---|---|---|---|---|
| 1 | c | 2 | d | 3 | d |
| 4 | b | 5 | a | 6 | c |
| 7 | c | 8 | c | 9 | d |

## Q2: Answer the questions :-

**1** The rest of Nagwa's saving = ( 3x + 5y -7 ) - ( 2x + y + 3 )

= 3x + 5y -7 - 2x - y - 3

= (x + 4y - 10 ) LE.

**2** $2x + 16^\circ = x + 1^\circ + 80^\circ$

$2x + 16^\circ = x + 81^\circ$

$2x - x = 81^\circ - 16^\circ$

$x = 65^\circ$

**3** let: m( A) = m( B) = m( C) = m( D) = X

$\overline{AB} // \overline{ED}$ , $\overleftrightarrow{AE}$ is a transversal

m( A) + m( E) = $180^\circ$

(interior angles in the same side of the transversal)

ABCDE is a pentagon

[m( A) + m( E)] + m( B) + m( C) + m( D) = $540^\circ$

$180 + X + X + X = 540^\circ$ $\quad$ $180 + 3X = 540^\circ$

$3X = 540 - 180 = 360^\circ$ $\quad$ $X = 360 \div 3 = 120^\circ$

m( A) = $120^\circ$

m( E) = $180 - 120 = 60^\circ$

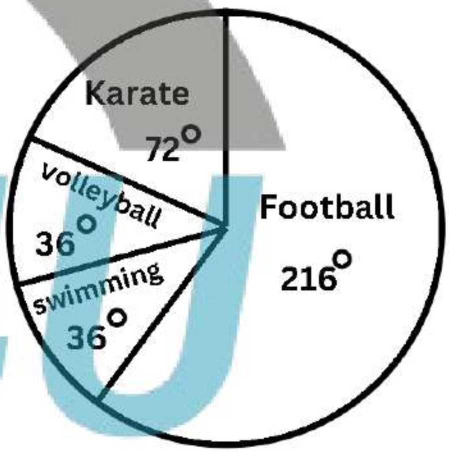
**4** The number of students = 160 students

The measure of the central angle of football = $\frac{96}{160} \times 360 = 216^\circ$

The measure of the central angle of swimming = $\frac{16}{160} \times 360 = 36^\circ$

The measure of the central angle of volleyball = $\frac{16}{160} \times 360 = 36^\circ$

The measure of the central angle of karate = $\frac{32}{160} \times 360 = 72^\circ$




**5** ABCD is a rectangle m( B) = 90°

In $\triangle$BCE :

m( CEB) = 180 - ( 44 +90 ) = 46°

E $\in \overline{AB}$

m( CED) = 180 - ( 46 +46 ) = 88°

**6** 1) A ∩ B = { 3 , 5 }

2) A ∪ C = { 2 , 3 , 4 , 5 , 9 , 7 }

3) A ∩ B ∩ C = { 5 }

4) A ∩ (B ∪ C) = { 2 , 3 , 4 , 5 } ∩ { 1 , 2 , 3 , 5 , 7 , 9 }
= { 2 , 3 , 5 }

**7** The tax = $\frac{14}{100} \times 520 = 72.8$ LE.

What Omar pays monthly = 520 + 72.8 = 592.8 LE.

## Q1: Choose the correct answer :-

| | | | | | |
|---|---|---|---|---|---|
| 1 | c | 2 | a | 3 | d |
| 4 | c | 5 | d | 6 | d |
| 7 | b | 8 | c | 9 | d |

## Q2: Answer the questions :-

**1** Scale drawing = $\frac{\text{height in picture}}{\text{real height}}$ $\quad \frac{1}{4} = \frac{\text{height in picture}}{160}$

Height in the picture = $\frac{160 \times 1}{4}$ = 40 cm.

**2**

| First | Second | Third | Sum |
|---|---|---|---|
| 3 | 4 | 5 | 12 |
| ? | ? | ? | 7,200 |

The share of the first person = $\frac{3 \times 7,200}{12}$ = 1800 LE

The share of the first person = $\frac{4 \times 7,200}{12}$ = 2400 LE

The share of the first person = $\frac{5 \times 7,200}{12}$ = 3000 LE

**3** The expression : 11 a + 9 b - 2

The numerical value = 11 x 2 + 9 x 1 - 2 = 22 + 9 - 2 = 29

**4** $(10x - 5) + (4x + 3) = 180^\circ$

$(14x - 2) = 180^\circ$

$14x = 180 + 2 = 182^\circ$ $x = 182 \div 14 = 13^\circ$

**5** ABCD is a rectangle

BC = AD (1)

EBCF is a parallelogram

BC = FE (2)

From 1 and 2 : AD = FE

By subtracting AF from both sides DF = AE

**6** $\left( \frac{2 + (-6)}{2} , \frac{-2 + 8}{2} \right) = (-2 , 3)$

**7**

1. 3.4 meters
2. The median = 3.4 meters , Q1 = 2.8 meters , Q3 = 4.8 meters
3. The range = 5.2 - 1.9 = 3.3 meters
4. The box plot

# كيفية طباعة صفحات معينة من ملف معين

## مثلا ازاى نطبع الصفحات من صفحة 4 الى صفحة 9

